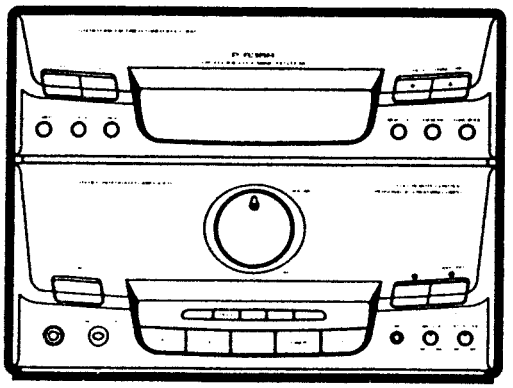
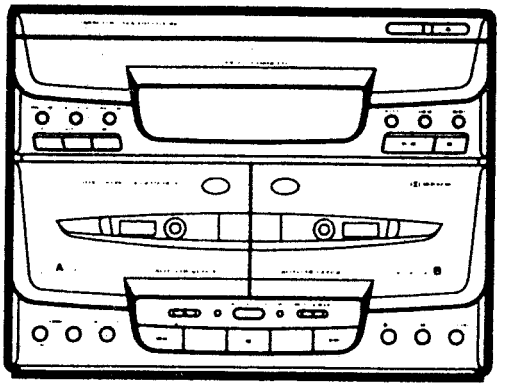
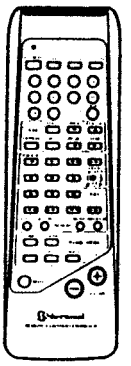
SERVICE MANUAL

P-636R







ATX-636R

- STEREO INTEGRATED AMPLIFIER
- STEREO AM/FM TUNER & TIMER

CCD-636R

- COMPACT DISC PLAYER (Three CD Changer)
- STEREO DOUBLE CASSETTE DECK

Sherwood

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CCD-636R

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SAFETY PRECAUTIONS

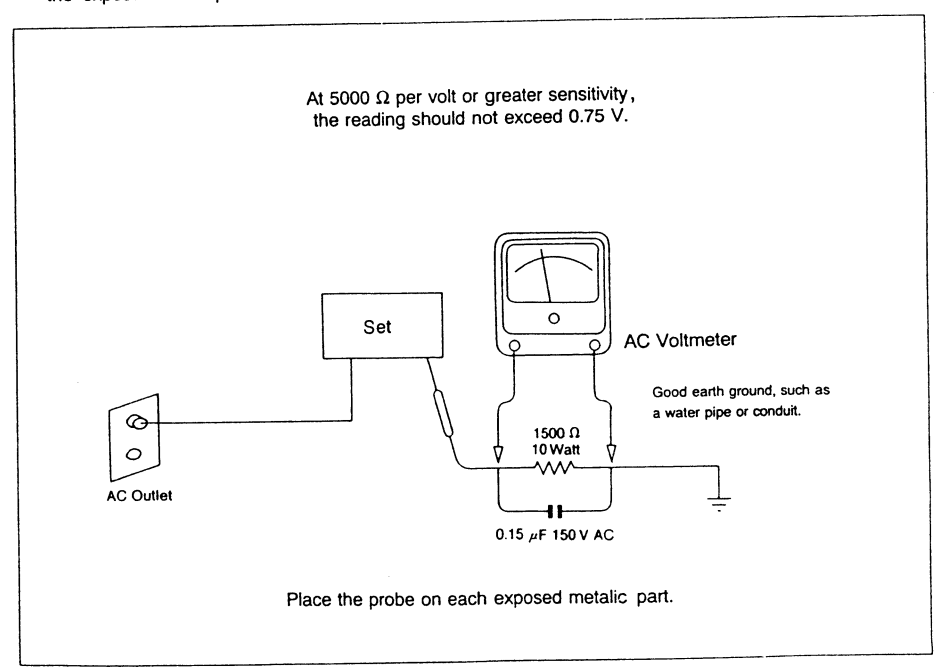
WARNING

Before servicing this unit, familiarize yourself with the following precautions:

1. Many electrical and mechanical parts in this chassis have special safety characteristics that often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by ⚠ in the schematic diagram and the parts list.

   Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

2. Before returning the set to the customer, always do an AC leakage current check on the exposed metal parts of the cabinet, such as terminals, screw heads, and metal overlays, to be sure the set is safe to operate danger of electrical shock.
   Plug the AC line cord directly into a 120 V AC outlet **(120 V AC version only).** (Do not use a line isolation transformer during this check.)
   Be sure your AC voltmeter has a sensitivity of 5000 Ω per volt or greater. Then connect a 1500 Ω 10 watt resistor, paralleled by a 0.15 μF 150 V AC capacitor, between a known good earth ground (such as a water pipe, or conduit) and the exposed metalic is parts, one at a time. Measure the AC voltage across the combination of a 1500 Ω resistor and a 0.15 μF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metalic part. Voltage measured must not exceed 0.75 V RMS. This corresponds to 0.2 mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


At 5000 Ω per volt or greater sensitivity,
the reading should not exceed 0.75 V.
Set
AC Voltmeter
Good earth ground, such as
a water pipe or conduit.
1500 Ω
10 Watt
AC Outlet
0.15 μF 150 V AC
Place the probe on each exposed metalic part.

ATX-636R
SPECIFICATIONS

Amplifier Section	Unit	Norminal	Limit
RMS output power			
at distortion below 0.3% 40 Hz – 20 kHz both channels driven at 6 Ω	W	30	25
at distortion below 0.3% 1 kHz both channels driven at 6 Ω	W	35	30
Intermodulation distortion at 30 W output 60 Hz : 7 kHz = 4:1 SMPTE	%	0.05	0.1
Marmonic distortion at 30 W output 1 kHz	%	0.1	0.2
Frequency response at 8 Ω load, 1 W output -3 dB	Hz	35-56 k	40-50 k
Input sensitivity for 30 W output 1 kHz:			
VIDEO	mV	220	±30
PHONO	mV	2.5	±0.5
Phone amp overload at 0.1% THGD, 1 kHz	mV	80	60
X-Bass compensation at Volume -30 dB:			
80 Hz	dB	10	±2
Channel separation with 4.7 kΩ shorted:			
1 kHz	dB	64	60
10 kHz	dB	59	55
Signal to noise input 4.7 kΩ shorted with IHF-A:			
PHONO at 10 mV	dB	70	65
VIDEO	dB	82	77

FM Section	Unit	Norminal	Limit
Tuning coverage for USA/Canada	MHz	87.5-107.9	
Tuning coverage for Europe	MHz	87.5-108	
Usable sensitivity at noise and distortion 3% 75 Ω input	uV	3	3
Image rejection at 106 MHz	dB	42	40
IF rejection at 90 MHz	dB	100	100
Full limiting at -3 dB	uV	2	2
50 dB quieting sensitivity at 98 MHz:			
STEREO	uV	34	50
Distortion at 1 mV input:			
MONO	%	0.15	0.4
STEREO	%	0.5	0.8
Signal to noise (S/N) ratio at 1 mV input:			
MONO	dB	70	68
STEREO	dB	68	65
AM rejedction ratio at 100 uV-20 mV input	dB	52	50
Searth level at 98 MHz	uV	10	10
Squrious response at 98 MHz (antenna input 3 uV)	dB	76	70
Capture ratio at 1 mV input	dB	2.5	3

MPX Section	Unit	Norminal	Limit
Stereo separation at 100% mod., 1 mV input:			
1 kHz	dB	40	35
10 kHz	dB	33	30
Distortiion at 100% mod., 1mV input through IHF filter:			
STEREO	%	0.4	0.8
Automatic stereo threshold	uV	10	10

AM Section	Unit	Norminal	Limit
Tuning coverage for USA/Canada	kHz	522-1611	
Tuning coverage for Europe	kHz	520-1710	
Usable sensitivity 600 kHz, 1010 kHz, 1400 kHz (603 kHz, 1008 kHz, 1404 kHz for Europe) at 400 Hz, 30% mod., S/N=-20 dB	uV	700	1000
Image rejection at 1400 kHz(1404 kHz for Europe)	dB	35	30
AGC fige of merit from 100 mV/m at 1010 kHz (1008 kHz fror Europe)	dB	52	50
Distortion at 400 Hz, 30% mod., 5 mV/m input	%	0.7	2
Selectifity at 10 kHz 350 uV/m input	mV	150	±50
Signal to noi8se(S/N) ratio at 1010 kHz (1008 kHz for Europe) with antenna input 5 mV/m	dB	32	30
Search level	dB	40	35

General

Power consumption ..... 180 W
Dimensions(HxWxD) ..... 270 x 203 x 280 mm
Weight(Net) ..... 9 Kg

Power requirements:

A : 120 V 60 Hz for American/Canadian version
B : 120/220 V, 60/50 Hz for mult-voltage version(switchable)
D : 230 V 50 Hz German/Gereral European version
E : 240 V 50 Hz for UK/Austalian version
G : 220 V 50 Hz for Other Area

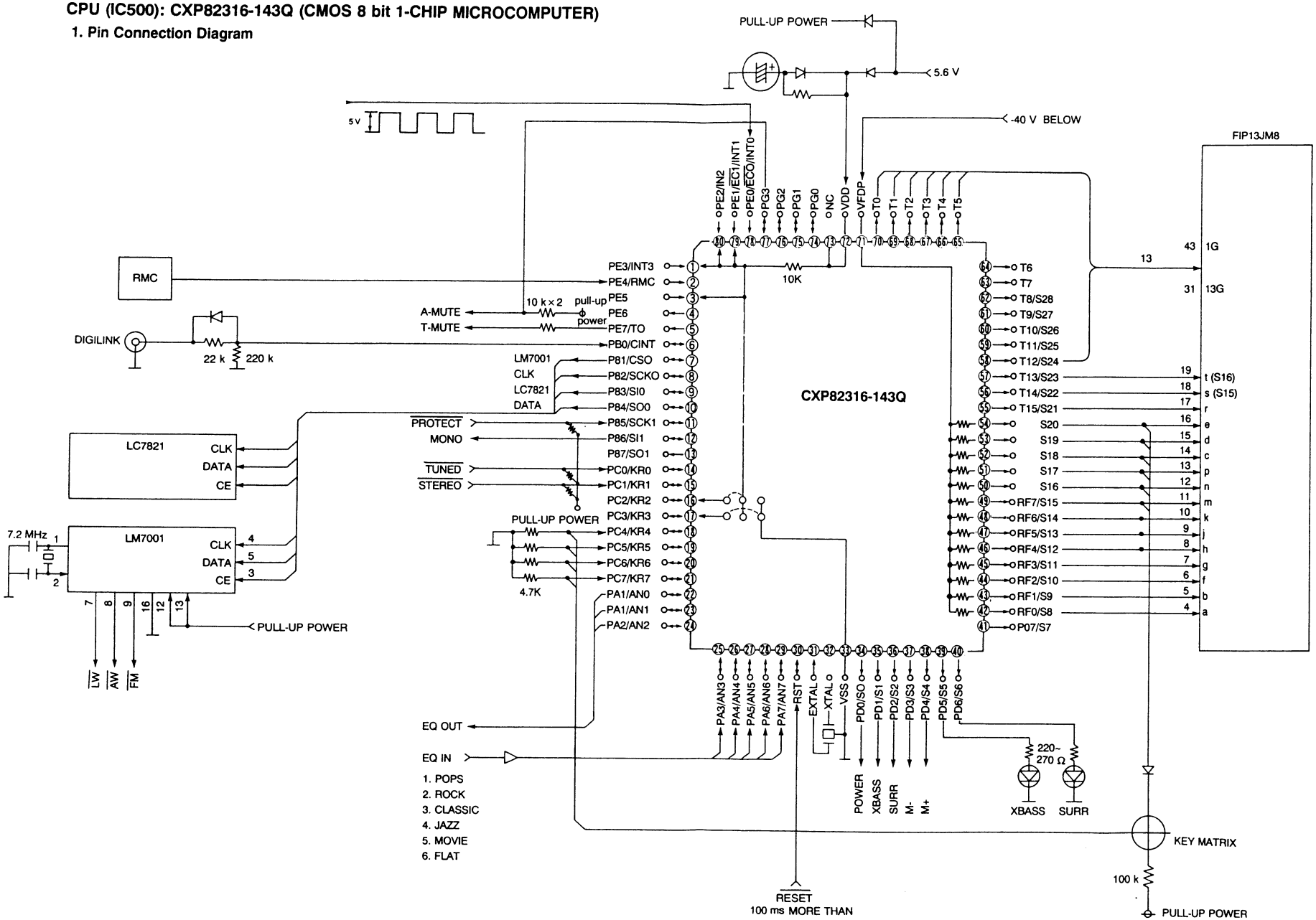
Notes:

1. Norminal specs represent the design specs. All unit should be able to approximate these-some will exceed and some may drop slight below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable: in no case should a unit fail to meet limit specs.
2. This manual is based on the American (A) stanndard, and provides information on regional circuit modification through the use of alternate schematic diagrams or wiring diagram, and information on regional component variations through the use of parts lists. Design and specifications subject to change without notice.

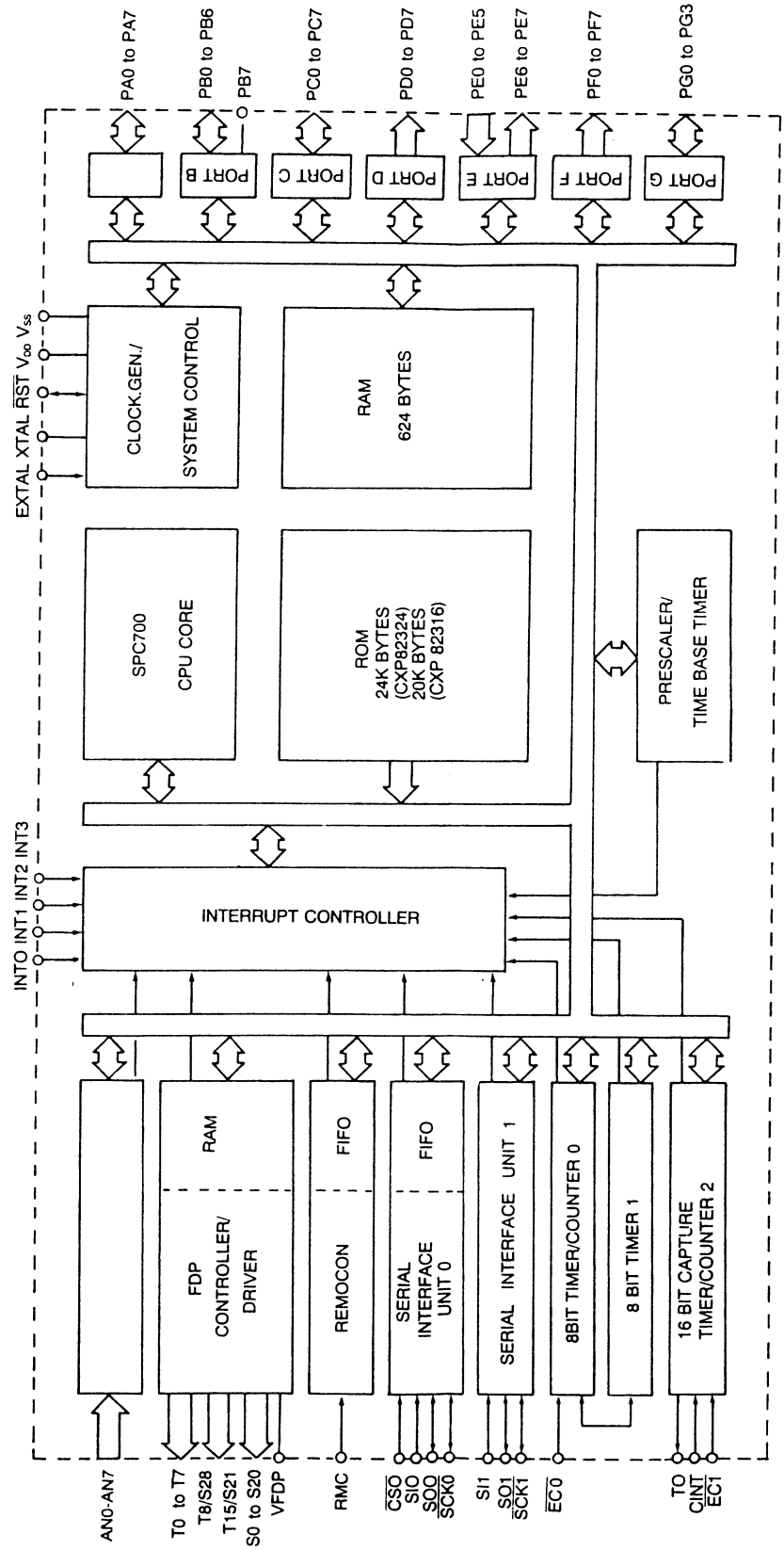
Note

CPU (IC500): CXP82316-143Q (CMOS 8 bit 1-CHIP MICROCOMPUTER)

1. Pin Connection Diagram



2. Block Diagram

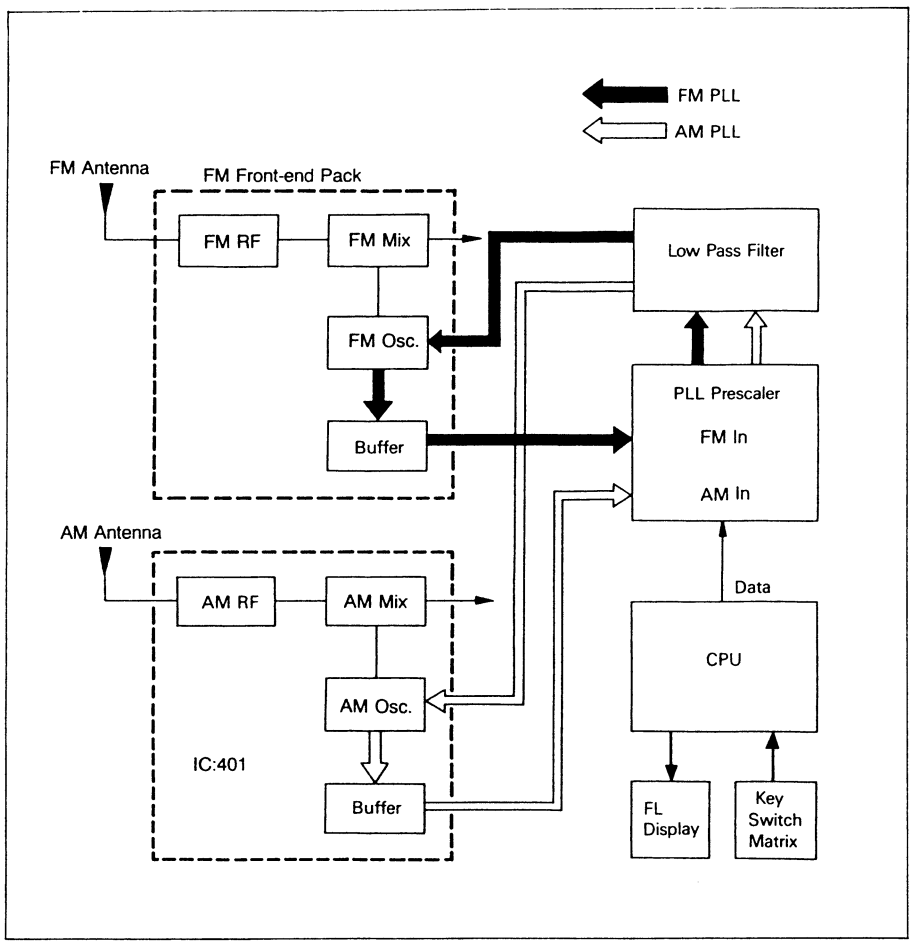


3. Pin Description

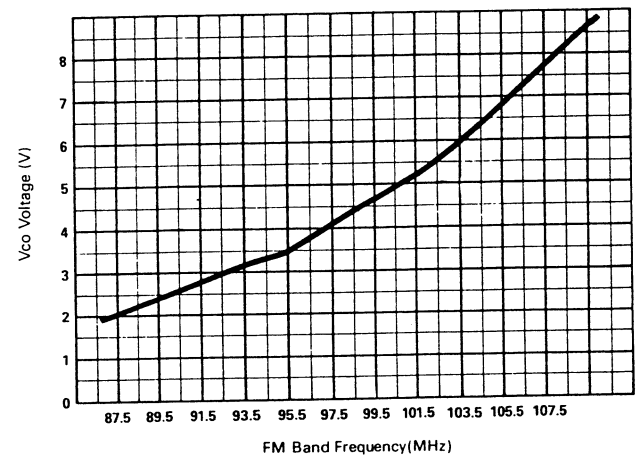
Symbol	I/O	Function	
PA0/AN0 to PA7/AN7	I/O/Analog input	(Port A) 8-bit port; single bit addressable. (8 lines)	Analog input to A/D converter. (8 lines)
PB0/CINT	I/O/Input	(Port B) Single bit addressable from amongst lower 7 bits; highest bit(PB7) dedicated to output. (8 lines)	External capture input for 16-bit timer/counter.
PB1/$\overline{CS0}$	I/O/Input		Chip select input for serial interface (CH0).
PB2/$\overline{SCK0}$	I/O/I/O		Serial clock (CH0) input/output.
PB3/SI0	I/O/Input		Serial data (CH0) input.
PB4/SO0	I/O/Output		Serial data (CH0) output.
PB5/$\overline{SCK1}$	I/O/I/O		Serial clock (CH1) input/output.
PB6/SI1	I/O/Input		Serial data (CH1) input.
PB7/SO1	Output/Output		Serial data (CH1) output.
PC0/KR0 to PC7/KR7	I/O/Input	(Port C) 8-bit port; single bit addressable. Can provide 12mA sink current. (8 lines)	Key return input for FDP segment signal which performs key scanning.
PE0/INT0/ $\overline{EC0}$	Input/Input/Input.	(Port E) 8-bit port with lower 6 bits dedicated to inpput and upper 2 bits dedicated to output. (8 lines)	Input for external interrupt requests. (4 lines) / External event input to. timer/counter. (2 lines)
PE1/INT1/ $\overline{EC1}$	Input/Input		
PE2/INT2	Input/Input		
PE3/INT3	Input/Input		
PE4/RMC	Input/Input		Input for remote control receiving circuit.
PE5	Input		
PE6	Output		
PE7/TO	Output/Output		Output pin for 16-bit timer/counter rectangular waveform.
PG0 to PG3	I/O	(Port G) 4-bit input/output port; single bit addressable. (4 lines)	
PF0/S8 to PF7/S15	Output/Output	(Port F) 8-bit dedicated output port. (8 lines)	Segment signal output for FDP.
S16 to S20	Output	Segment signal output for FDP.	
T8/S28 to T15/S21	Output/Output	Dual purpose output for FDP timing and segment signals.	
T0 to T7	Output	Timing signal output for FDP.	

Symbol	I/O	Function	
PD0/S0 to PD7/S7	Output/Output	(Port D) 8-bit dedicated output port. (8 lines)	Segment signal output for FDP.
V_{FDP}		Provides voltage for FDP when on-chip resistor is selected under mask option.	
EXTAL	Input	Connection for system clock oscillation crystal. When using an external clock, input normal signal to EXTAL and reverse phase signal to the XTAL pin.	
XTAL	Output		
$\overline{RST}$	I/O	System reset, active "L". The $\overline{RST}$ pin is an input/output pin which outputs a "L" level from the on-chip power on reset circuit when the power is turned on.	
NC		NC pin is always connected to V_{DD}.	
V_{DD}		Positive power supply pin.	
V_{SS}		GND	

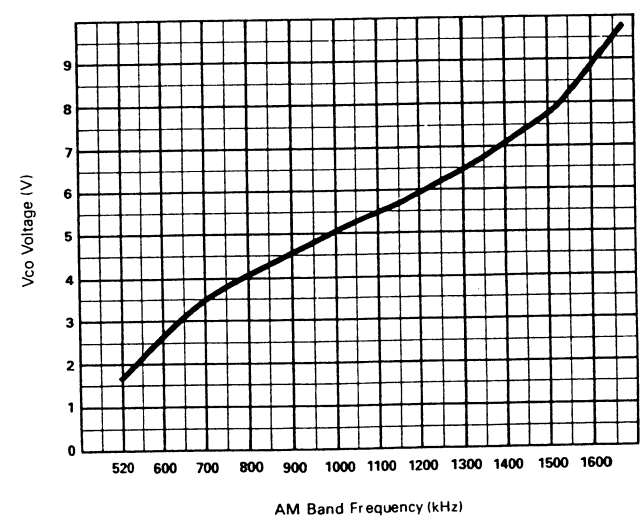
DIGITAL TUNING SYSTEM DESCRIPTION



1. Vco vs. FM Band Frequency Curve



2. Vco vs. AM Band Frequency Curve



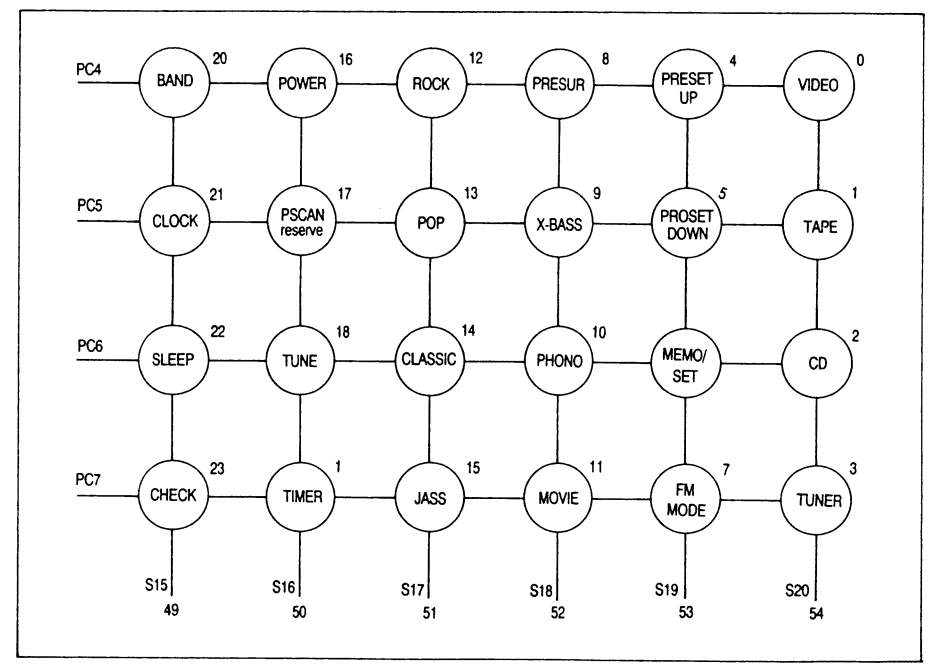
CONTROL KEY AND MODE SWITCH MATRIX

Searching for Station
Automatic Tuning
Pressing the TUNE △ or TUNE ▽ key causes automatic up or down searching for a station until a station is received.

Manual Tuning
By pressing the TUNE △ or TUNE ▽ key, the frequency is changed by a step. If the key is kept pressing scanning is continued until the key is released.

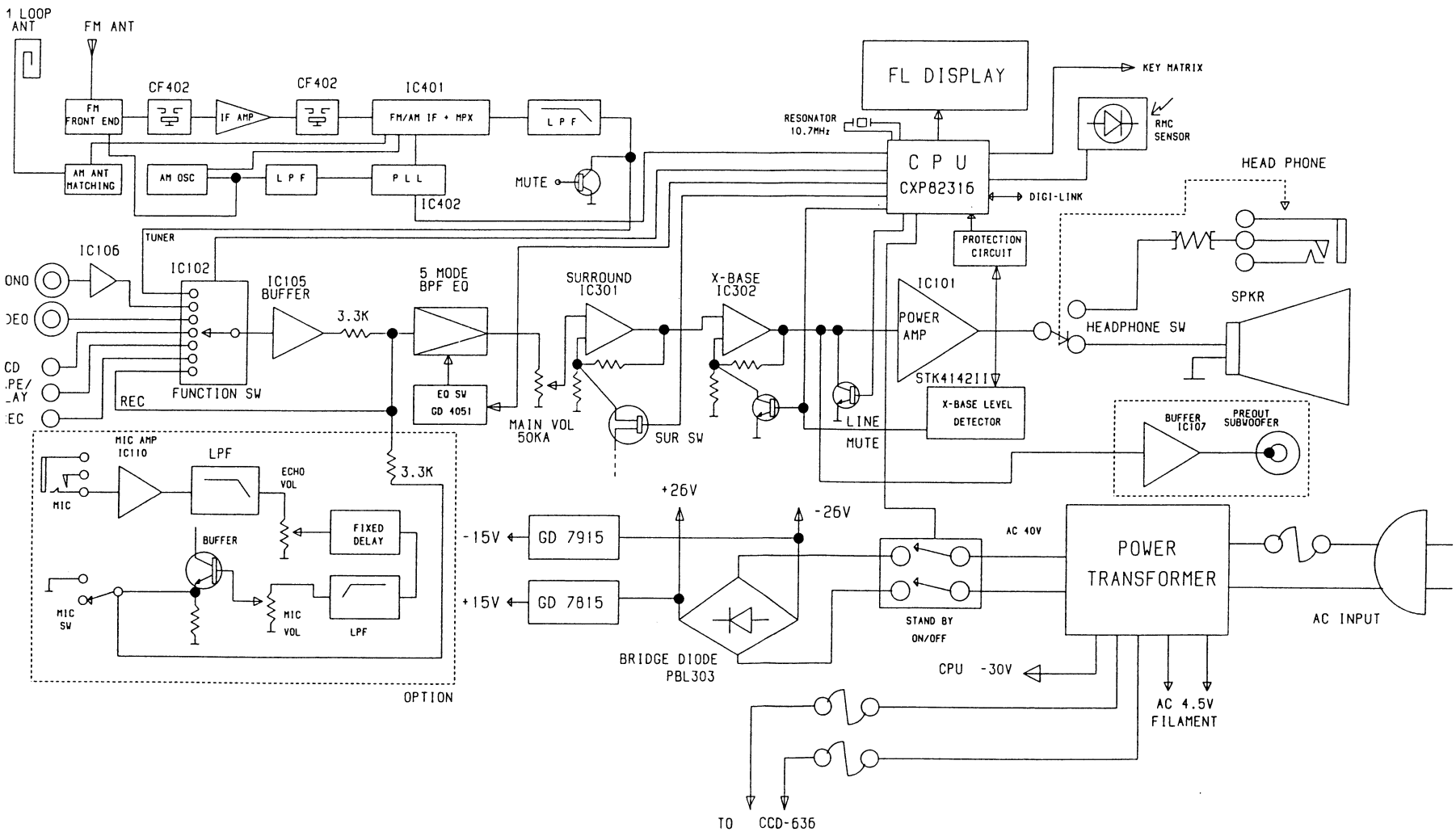
Memory
The tuning information is stored into an internal RAM by pressing the MEMORY key and then pressing one of 30 preset locations while the memory indicator 'MEMORY'blinks.
If no key is pressed while the indicator blinks, the memory function is canceled.

M1 to M10
Thirty AM and FM stations can be recalled from internal RAM. When it is switched from one band to the other band, the tuner tunes to the station last tuned on that band. Each time a station is changed, the controller provides a signal to mute the tuner.



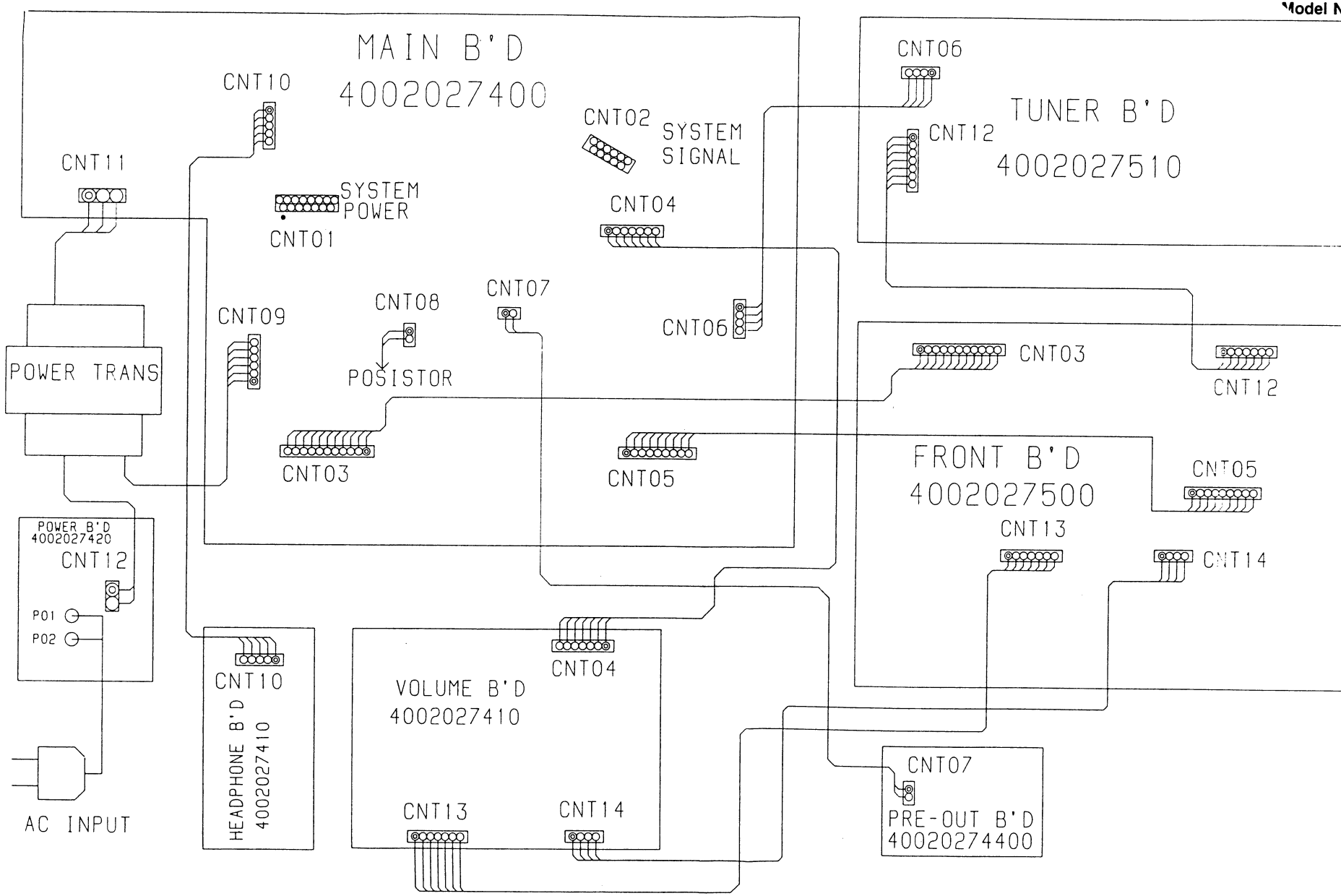
BLOCK DIAGRAM

Model No.: ATX-636R



WIRING DIAGRAM

Model No.: ATX-636R



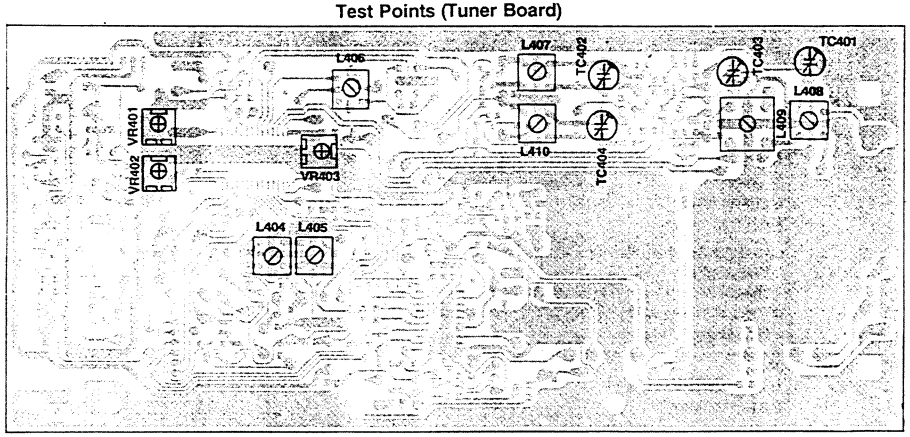
ALIGNMENT PROCEDURES

Equipment Required

- AM signal generator
- Oscilloscope
- AC voltmenter
- Stereo modulator
- Audio generator
- Distortion meter
- DC voltmenter
- Frequency counter

Note: Remove line cord antenna from FM external antenna terminal when aligning.

Test Points (Tuner Board)



1. AM IF and RF Alignment

- Output of signal generator should not be greater then necessary to obtain an optimum output reading.
- Signal generator modulation: 30%.
- Switch: Press to AM.

No	Subject	Feed Signal From	Feed Signal To	Setting	Meausre	Adjust	Adjust	Remark
1.	Tuning Voltage	520 kHz	1710 kHz	*1) 520 kHz	Connect DVM VT	L407	DC 1±0.2 V	
		1619 kHz		*2) 1710 kHz		TC402	DC 8.5±0.3 V	
		● Repeat the step *1) and *2) until DVM reads the tuning voltage mentioned above. ● In case the freq. is 9 kHz, the freq. of AM SG and appliance should be changed to *1) 522 kHz *2) 1611 kHz.						
2.	IF	AM IF genescope	Antenna	1000 kHz	Connect IF genescope	L406	Symmetrical curve on AM IF genescope	
3.	RF Runing	*1) AM SG 603 kHz, 78 dB 400 Hz (30% Mod.)	Antenna	603 kHz	Output Connect AC Voltmeter & oscilloscope	L408	Maximize audio output	AM SG. Test Loop Antenna. 60cm Appliance
		*2) AM SG 1400 kHz, 74 dB 400 Hz (30% Mod.)	Antenna.	1400 kHz		TC401		
		● Feed signal should be fed to loop antenna through the TEST Loop ant, 60cm distant from the appliance ● Repeat the step *1) & *2) until no further improvement occurs. ● In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1) 603 kHz *2) 1404 kHz.						
4.	Signal Meter	AM SG 1000 kHz, 84 dB 400 Hz (30% Mod.)	Antenna.	1000 kHz		VR401	Tuned light on	
		● In case the frequency. step is 9 kHz, the frequency of AM SG and appliance should be changed to 999 kHz.						

2. LW Alignment

- Selector SW:Tuner, MW/AM
- This adjustment is nesessary to 3 band (MW/LW/FM).

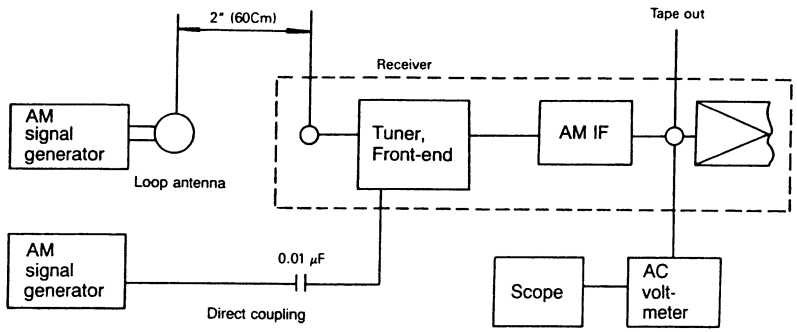
No	Subject	Feed Signal From	Feed Signal To	Setting Appliance	Measure Output	Adjust Point	Adjust For	Remark
1.	Tuning Voltage	279 kHz	279 kHz	*1) 153 kHz	Connect DVM VT	L410 TC404	DC 2±0.2 V	
				*2) 279 kMHz			DC 5.5±0.2 V	
		● Repeat the step *1)and *2)until DVM reads the tuning voltage mentioned above						
2.	RF Tuning	*1) AM SG 162 kHz, 84 dB 400 Hz (30% Mod).	Antenna.	162 kHz	Output connect AC voltmeter & oscilloscope	L409	Maximize audio output	
		*2) AM SG 252 kHz, 84 dB 400 Hz (30%n Mod.)		252 kHz		TC 403		
		● Feed signal should be fed to loop antenna. through the test loop Antenna 60 cm distant from the appliance. ● Repeat the step *1)and *2)until no further improvement occurs.						

3. FM Alignment

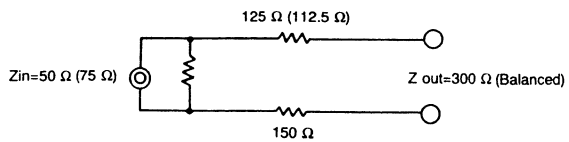
Preparation

- Signal generator output should be no greater than necessary to obtain an optimum output reading.
- Switch: Press to FM.
- Signal generator deviation: 75 kHz.
- Be sure to disconnect FM line cord antenna during alignment.

No	Subject	Feed Signal From	Feed Signal To	Setting Appliance	Measure Output	Adjust Point	Adjust For	Remark
1.	Tuning voltage	87.5 MHz	107.9 MHz	87.5 MHz	Connect DVM VT		DC 2.0±0.2 V	
				107.9 MHz			DC8.0±0.2 V	
2.	THD (Mono)	FM SG 98.1 MHz, 60 dB 1 kHz (75 kHz Dev.)	Antenna	98.1 MHz Mono	*1)Output connect DVM	L405	DC 0±0.05 V	
					*2)Output connect AC voltmeter & distortion analyzer.	L404	Minimize distortion	
		● Adjust the step *1) 1st and the step *2) next and repeat until to further improvement occurs.						
3.	THD (Stereo)	FM SG 98.1 MHz,60 dB 1 kHz (75 kHz Dev.) Pilot 19 kHz (9% Mod.)	Antenna	98.1 MHz stereo	Output connect AC voltmetr & distortion.	Front-end.	Minimize distortion	
4.	Mute level	FM SG 98.1 MHz, 15μV 1 kHz (75 kHz Dev.)	Antenna	98.1 MHz mono	Output connect oscilloscope	VR403	Tuned on	
5.	Separation	*1) FM SG 98.1 MHz, 0 dB 1 kHz(75 kHz, Dev.) Pilot 19 kHz (10% Mod.) (L ch. mode)	Antenna	98.1 MHz stereo	R ch. mode connect AC voltmeter & distortion analyzer and oscilloscope.	VR402	Minimize output	L ch. mode
		*2) Same as above (R ch. mode)			L ch. mode connect same as above.			R ch mode
		● Repeat the step *1) until no further improvement occurs.						

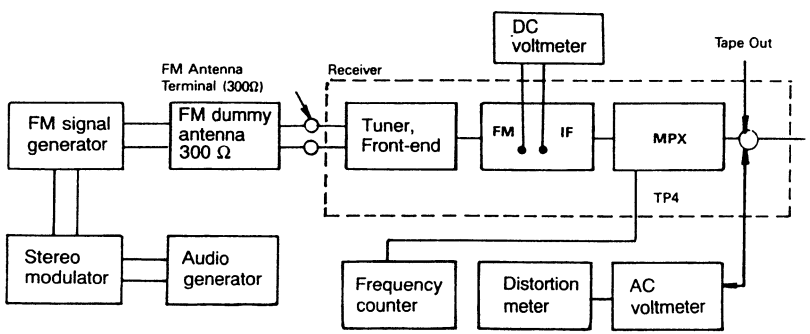


AM Alignment Connection



FM Dummy Antenna to 300Ω Antenna terminal of receiver

FM Dummy Antenna



FM RF/IF and MPX Alignment Connection

TROUBLESHOOTING

Symptom	Cause and Remedy
Tuner and amplifier inoperative (FL indicator does not light).	● Faulty AC power cord. Replace. ● Defect in the power switch. Replace. ● Broken wire and PCB in the power transformer. Replace the power transformer. ● Blown power. Replace the fuse.
Fuse blows when power is turned on.	● Defective power transformer. Replace. ● Short in the primary or secondary of the transformer circuitry. ● Damaged rectifier PBL303. Replace the defective component. ● Short in the rectifier circuit. Repair the short.
Display of the amplifier lights but no sound from both channels.	● H/P board CNT10 does not mate with Main board CNT10 Plug. Replace the CNT10. ● Defect in power IC101 on the main amp board. Replace the defective component (s). ● Q101 or Relay 01 defective. Replace the defective cojmponent (s).
Speaker works normally but headphones inoperative.	● Defective resistor R601, R602. Replace.
All the inputs work normally except VIDEO input.	● Poor contact in VIDEO input jack. Repair or replace the jack. ● Defective IC102 Replace.
PHONO input inoperative.	● Poor contact in phono input jack. Repair or replace the jack. ● Defective IC102 Replace.
TAPE has no effect.	● Defective contact in system CNT3. Repair or replace the connector. ● Defective IC102 Replace.
FM inoperative.	● Defective front-end. Replace. ● Defective FM switch. Replace the switch. ● Defective transistor Q407, Q409, Q410, Q408 or IC401. Replace the defective transistor (s) or IC. ● Defective coil L404 or L405. Replace the coil (s). ● Defective lead-in. Repair or replace the lead in. ● Ceramic filter CF402, CF403 defective. Replace the defective ceramic filter (s).

Symptom	Cause and Remedy
FM inoperative.	● Defective controller circuit component. Replace.
Poor multiplex separation.	● Improper adjustment. Readjust VR402. (Refer to MPX alignment.) ● IC401 defective. Replace. ● Variable resistor VR402 defective. Replace the variable resistor.
STEREO indicator does not light.	● Defective indicator in FL. Replace. ● Defective IC401 Replace the defective component.
FM MUTE has no effect.	● Defective FM MONO/FM STEREO off switch. Replace the switch. ● Defective IC401. Replace.
AM inoperative.	● Damaged IC401 of tuner board. Replace. ● Defective L401~L406 or CF401 of tuner board. ● Defective AM switch. Replace. ● Defective varicap diode VD401. Replace varicap diode(s). ● Damaged AM loop antenna. Repair or replace. ● Defective controller circuit component. Replace.
AUTO tune inoperative (up/down) at AM or FM.	● Poor contact in up/down key. Repair or replace. ● Defective IC201. Replace. ● Defective FL. Replace. ● Defective tuner circuit component. Replace. ● In FM only, improper adjustment of FM front-end. Replace.
MAUNAL tune inoperative (up/down) at AM or FM.	● Poor contact in up/down key. Replace. ● Defective IC201. Replace.
MEMORY setting inoperative.	● Defective IC201. Replace.
FL inoperative.	● FL defective. Replace. ● Defective IC500. Replace. ● Defective D117, D118. Replace the component(s).

Symptom	Cause and Remedy
Noise volume control.	● Defective Q304, 305, 307, 308. Replace the component (s). ● Defective capacitor C321 or C322. Replace the defective capacitor (s).
Remote control unit inoperative.	● Weak Battery. Replace. ● Defective. RCVR. Replace. ● Defective IC500. Replace.

MECHANICAL PARTS LIST

CABINET AND CHASSIS

Ref. No.	Part No.	Description	Q'ty	Version
PACKGE				
	9722036810	Cushion, Poly	1	
	9715000120	Film, Soft	1	
ACCESSORIES				
	4348000810	ANT Wire (FM)	1	
	5418000132	Ass'y Commander	1	
	2608207361	ANT AM Loop Stand Strip Wire	1	
	9007017605	Manual Instruction	1	
1	048501030911	Panel Front	1	Dom
	048501030921	Panel Front	1	A,D,AVS
	048501030922	Panel Front	1	Migros
	048501030912	Panel Front	1	G,E,PT INDO
	048501030913	Panel Front	1	Packard bell
2	048535038311	Badge	1	Dom
	048535040411	Badge	1	A,D,E,G,AVS,PT INDO
	048535042111	Badge	1	Packard bell
	048535040811	Badge	1	Migros
3	8553018010	Window Display	1	
4	048543046611	Knob Rotary(Main Vol.)	1	
5	8555042320	Indicator VR	1	
6	6715021230	Foot Cushion	4	
7	048543054311	BTN Tact(5Key), EQ	1	Dom
	048543054312	BTN Tact(5Key), EQ	1	
8	048543054411	BTN Tact(5Key), Function	1	Dom
	048543054412	BTN Tact(5Key), Function	1	
9	8555046410	Indicator, X-Bass	2	
10	048545118711	Knob Rotary, Mic/Ehco	2	Dom,G,E,PT INDO,P/B
11	048543054212	BTN Tact(2Key), X-Bass	1	
12	8545118610	BTN Tact(3Key), Timer	2	
13	048543054211	BTN Tact(2Key), Tuning	1	
14	6528002810	Locking Tie	1	
15	048543054111	BTN Tact(2Key), Sleep	1	
16	048545118511	BTN Tact(1Key), Power	1	
17	4438005520	Jack Mic 9P	2	Dom,G,E,PT INDO,P/B
	4438005520	Jack Mic 9P	1	A,AVS,D,Migros
18	6045010110	Guide Sensor	1	
19	4658003710	SW Tact	23	
20	6715019710	Spacer Rubber	2	
21	⚠ 4308007310	Cord AC Power	1	Dom
	⚠ 4308001410	Cord AC Power	1	A,AVS,P/B
	⚠ 4308000430	Cord AC Power	1	D,G,PT INDO,Migros
	⚠ 4308007610	Cord AC Power	1	E
22	3208067410	VR Motor(Main)	1	
23	6513000310	Stopper Cord	1	Dom
	6518000710	Stopper Cord	1	A,AVS,P/B
	6518000111	Stopper Cord	1	D,G,E,PT INDO,Migros
24	4408105410	Terminal Speaker 4P	1	
25	6165146010	Shield Fence(MIC Jack)	2	Dom,E,G,PT INDO,P/B
26	6165146110	Shield Fence(MIC VR)		Dom,E,G,PT INDO,P/B
27	4408104910	Terminal Ground	1	
28	3208352210	VR Mic/Ehco	2	Dom,E,G,PT INDO,P/B
29	7505202420	H/Sink Reg. TR	1	
30	046102037611	Chassis Back	1	Dom
	046102037621	Chassis Back	1	A
	046102037622	Chassis Back	1	AVS
	046102037623	Chassis Back	1	P/B
	046102037651	Chassis Back	1	D
	046102037652	Chassis Back	1	Migros
	046102037653	Chassis Back	1	G
	046102037654	Chassis Back	1	E
	046102037681	Chassis Back	1	PT INDO
31	4438111310	Jack RCA 2P	1	

Ref. No.	Part No.	Description	Q'ty	Version
32	6122419610	Cover Buttom	1	
33	6122621610	Frame Right	1	
34	4408107110	Terminal ANT	1	Dom,A,AVS,P/B
	4408101610	Terminal ANT	1	D,E,G,PT INDO,Migros
35	4438110010	Jack RCA 1P	1	Dom(Only)
36	7503015910	H/Sink Power	1	
37	⚠ 2828000747	Power Transformer, 120 V 60 Hz	1	L/CSA
	⚠ 2828000757	Power Transformer, 220 V 60 Hz	1	Dom
	⚠ 2828000737	Power Transformer, 230 V 50 Hz	1	D
	⚠ 2828000817	Power Transformer, 240 V 50 Hz	1	E
	⚠ 2828000637	Power Transformer, 110/220 V 60 Hz	1	B
38	6122621510	Frame Left	1	
39	6505134310	BKT PCB "A"	1	
40	6505134410	BKT PCB "B"	1	
41	046122028121	Cover Top	1	
42	4618006510	SW Votage Sel.	1	PT INDO(Only)
43	⚠ 4448105510	Outlet AC	1	Dom(Only)
44	6518002210	Stopper CNT, 15P	1	
45	6518002110	Stopper CNT, 11P	1	
46	4428515800	CNT System, 15P	1	
47	4428511800	CNT System, 11P	1	
P1	4002027400	P.C.B Main	1	
P1-1	4002027420	P.C.B Volume	1	
P1-2	4002027410	P.C.B Power	1	
P1-3	4002027430	P.C.B Headphone	1	
P1-4	4002027440	P.C.B Preout	1	
P2	4002027500	P.C.B Front	1	
P2-1	4002027510	P.C.B Tuner	1	
P2-2	4002027520	P.C.B Selecter		
S1	8109230083	Screw #2BTC 3x8B	41	
S2	8129230083	Screw #2FTC 3x8B	4	
S3	8155001210	Screw Mecha	1	
S4	8159230081	Screw #2WPTC 3x8Y	9	
S5	8099130121	Screw HEX MSPW 3x12Y	3	
S6	8159550083	Screw WSAM 4x8B	4	
S7	8119130103	Screw #1PT 3x10B	11	
S8	8119240061	Screw #2PTC 4x6Y	1	

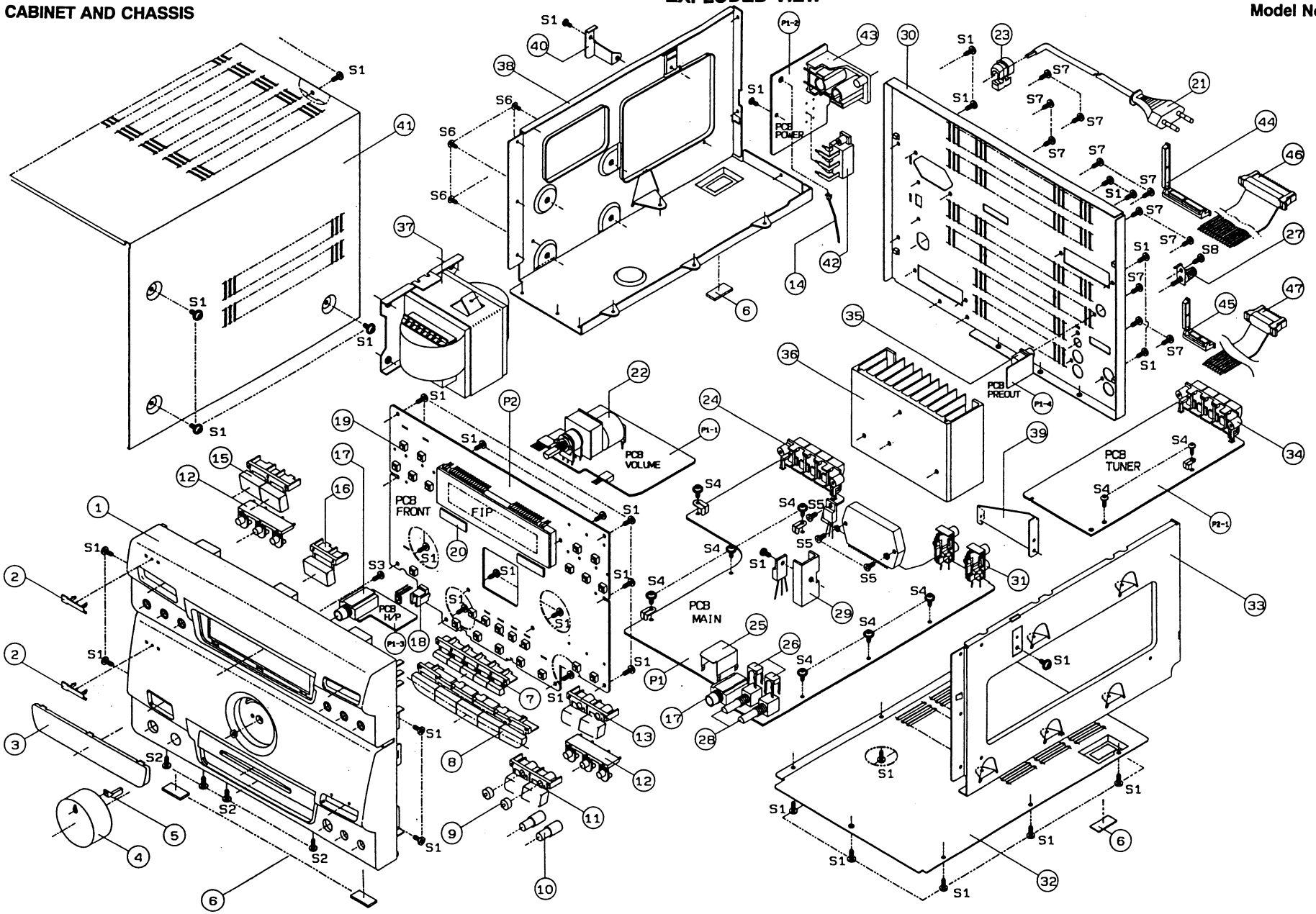
PRODUCT SAFETY NOTICE

Each precaution in this manual should be follower during servicing. Components identified with the IEC symbol ⚠ in the parts list and the safety can be of special significance. When replacing a component identified with ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CABINET AND CHASSIS

EXPLODED VIEW

Model No.: ATX-636R



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE:Products marked with ⚠ have special characteristics important to safety.
If you replace any of these components, read carefully the product safey notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor tolerance—D:(±0.5%), J:(±5%), K:(±10%), M:(±20%), Z:(+80, -20%)

Ref. No.	Part No.	Description	Q'ty	Version
P1	054101010008	ASS'Y P.C.B MAIN		
17	4438005520	Jack MIC, 9P	2	Dm,E,F,T 800,/B
	4438005520	Jack MIC, 9P	1	A,AVS,D,Migros
24	4408105410	Terminal Speaker, 4P	1	
25	6165146010	Shield Fance(MIC Jack)	1	Dm,E,F,T 800,/B
26	6165146110	Shield Fance(MIC VR)	2	Dm,E,F,T 800,/B
28	3208052210	VR MIC/Echo	2	Dm,E,F,T 800,/B
29	7505202420	H/Sink Reg. TR	1	
31	4438111310	Jack RCA, 2P	2	
CNT01	435115600533	Lead Ass'y 15P 60mm, to CCD636	1	
	4428515800	Wafer 15P	1	
CNT02	4328611501	Lead Ass'y 11P , to CCD636	1	
	4428511800	Wafer 11P	1	
CNT03	4428517010	Wafer 11P, from Front B'D	1	
CNT04	4428516810	Wafer 7P, from Volume B'D	1	
CNT05	4428516810	Wafer 9P, from Front	1	
CNT06	436204183332	Lead Ass'y 4P 180mm, to Tuner B'D	1	
CNT07	4428516110	Wafer 2P, from Precut B'D	1	
CNT08	4428516110	Wafer 2P	1	
CNT09	4428505810	Wafer 6P, from Power Trans	1	
CNT10	4428506970	Wafer 5P, from Headphone B'D	1	
CNT11	4428525970	Wafer AC 3P, from Power Trans	1	
C101	3679473120	Mylar 0.047 µF 100 V J	1	
C102/C103	3519220935	Ceramic Tubleiar 22 pF 50 V J	2	
C104/C105	3519101935	Ceramic Tubleiar 100 pF 50 V J	2	
C106/C107	3519680935	Ceramic Tubleiar 68 pF 50 V J	2	
C108/C109	3479247971	Electrolytic SA 4.7 µF 50 V M	2	
C110/C111	3519100935	Ceramic Tubleiar 10 pF 50 V J	2	
C112/C113	3519101935	Ceramic Tubleiar 100 pF 50 V J	2	
C114/C115	3479310121	Electrolytic SG 100 µF 10 V M	2	
C116	3679182120	Mylar 0.0018 µF 100 V J	1	
C117/C118	3519222935	Ceramic Tubleiar 2200 pF 50 V J	2	
C119	3679182120	Mylar 0.0018 µF 100 V J	1	
C120/C121	3479322071	Electrolytic SG 22 µF 50 V M	2	
C122	3679562120	Mylar 0.0056 µF 100 V J	1	
C123	3519221935	Ceramic Tubleiar 220 pF 50 V J	1	
C124	3679103120	Mylar 0.01 µF 100 V J	1	
C125	3519221935	Ceramic Tubleiar 220 pF 50 V J	1	
C126	3519569935	Ceramic Tubleiar 5.6 pF 50 V J	1	
C127	3519561935	Ceramic Tubleiar 560 pF 50 V J	1	
C128	3479322071	Electrolytic SG 22 µF 50 V M	1	
C129	3679562120	Mylar 0.0056 µF 100 V J	1	
C130/C131	3479347041	Electrolytic SG 47 µF 25 V M	2	
C132	3479247971	Electrolytic SA 4.7 µF 50 V M	1	
C133	3479347041	Electrolytic SG 47 µF 25 V M	1	
C134	3479247971	Electrolytic SA 4.7 µF 50 V M	1	
C135	3479347041	Electrolytic SG 47 µF 25 V M	1	
C136/C137	3479210071	Electrolytic SA 10 µF 50 V M	2	
C138	3479322071	Electrolytic SG 22 µF 50 V M	1	
C139	3479310171	Electrolytic SG 100 µF 50 V M	1	
C140	3519561935	Ceramic Tubleiar 560 pF 50 V J	1	
C141-C144	3479247971	Electrolytic SA 4.7 µF 50 V M	4	
C145/C146	3479210071	Electrolytic SA 10 µF 50 V M	2	
C147	3679203120	Mylar 0.02 µF 100 V J	1	
C148/C149	3679562120	Mylar 0.0056 µF 100 V J	2	
C150	3479347041	Electrolytic SG 47 µF 25 V M	1	
C151	3479310121	Electrolytic SG 100 µF 10 V M	1	
C152	3479233971	Electrolytic SA 3.3 µF 50 V M	1	
C153	3479347041	Electrolytic SG 47 µF 25 V M	1	
C154/C155	3679473120	Mylar 0.047 µF 100 V J	2	D

Ref. No.	Part No.	Description	Q'ty	Version
C156	3479210971	Electrolytic SA 1 µF 50 V M	1	
C157	3479322071	Electrolytic SG 22 µF 50 V M	1	
C158	3479247971	Electrolytic SA 4.7 µF 50 V M	1	
C159/C160	3679473120	Mylar 0.047 µF 100 V J	2	
C161	3479322071	Electrolytic SG 22 µF 50 V M	1	
C162/C163	3479247971	Electrolytic SA 4.7 µF 50 V M	2	
C164	3519473935	Ceramic Tubleiar 0.047 µF 50 V Z	1	
C165/C166	3519101935	Ceramic Tubleiar 100 pF 50 V J	1	
C167	3479247111	Electrolytic SA 470 µF 6.3 V M	1	
C168	3479347041	Electrolytic SG 47 µF 25 V M	1	
C169-C171	3519101935	Ceramic Tubleiar 100 pF 50 V J	3	
C172	3479347041	Electrolytic SG 47 µF 25 V M	1	
C173/C174	3479247971	Electrolytic SA 4.7 µF 50 V M	2	
C175	3519473935	Ceramic Tubleiar 0.047 µF 50 V Z	1	
C176	3479347041	Electrolytic SG 47 µF 25 V M	1	
C177	3519101935	Ceramic Tubleiar 100 pF 50 V J	1	
C178	3479310171	Electrolytic SG 100 µF 50 V M	1	
C179	3519473935	Ceramic Tubleiar 0.047 µF 50 V Z	1	
C180	3479222971	Electrolytic SA 2.2 µF 50 V M	1	
C181/C182	3479347041	Electrolytic SG 47 µF 25 V M	2	
C183	3479222971	Electrolytic SA 2.2 µF 50 V M	1	
C184	3519251935	Ceramic Tubleiar 250 pF 50 V J	1	
C185/C186	3519101935	Ceramic Tubleiar 100 pF 50 V J	2	
C187	3679203120	Mylar 0.02 µF 100 V J	1	
C188	3479222971	Electrolytic SA 2.2 µF 50 V M	1	
C189	3519222935	Ceramic Tubleiar 2200 pF 50 V J	1	
C190	3479210971	Electrolytic SA 1 µF 50 V M	1	
C191	3519101935	Ceramic Tubleiar 100 pF 50 V J	1	
C192	3479247971	Electrolytic SA 4.7 µF 50 V M	1	
C193	3519101935	Ceramic Tubleiar 100 pF 50 V J	1	
C194	3479347041	Electrolytic SG 47 µF 25 V M	1	
C195/C196	3679332120	Mylar 0.0033 µF 100 V J	2	
C197	3479222971	Electrolytic SA 2.2 µF 50 V M	1	
C198	3519221935	Ceramic Tubleiar 220 pF 50 V J	1	
C199	3479347041	Electrolytic SG 47 µF 25 V M	1	
C200	3679123120	Mylar 0.012 µF 100 V J	1	
C201	3679122120	Mylar 0.0012 µF 100 V J	1	
C202	3679152120	Mylar 0.0015 µF 100 V J	1	
C203	3479233971	Electrolytic SA 3.3 µF 50 V M	1	
C204	3479210071	Electrolytic SA 10 µF 50 V M	1	
C205/C206	3519103935	Ceramic Tubleiar 0.01 µF 50 V Z	2	
C207	3479347041	Electrolytic SG 47 µF 25 V M	1	
C208	3479222971	Electrolytic SA 2.2 µF 50 V M	1	
C209	3479210071	Electrolytic SA 10 µF 50 V M	1	
C210	3479310121	Electrolytic SG 100 µF 10 V M	1	
C211	3679152120	Mylar 0.0015 µF 100 V J	1	
C212	3679562120	Mylar 0.0056 µF 100 V J	1	
C213/C214	3519222935	Ceramic Tubleiar 2200 pF 50 V J	2	D
C215	3479347071	Electrolytic SG 47 µF 50 V M	1	
C216-C218	3679473120	Mylar 0.047 µF 100 V J	3	D
C219/C220	3419533294	Electrolytic SA 3300 µF 40 V M	2	
C221	3579473530	Ceramic Tubleiar 0.047 µF 50 V Z	1	
C222	3519569935	Ceramic Tubleiar 5.6 pF 50 V J	1	D
C223	3519222935	Ceramic Tubleiar 2200 pF 50 V J	1	
C224	3479347041	Electrolytic SG 47 µF 25 V M	1	
C225	3679473120	Mylar 0.047 µF 100 V J	1	D
L101	2648001010	Inductor Coil 0.5uH	1	
L102	2648001010	Inductor Coil 0.5uH	1	
D100	2058100148	Diode, PBL303	1	
D101-D107	2058322101	1N4148M, Switching	7	

Ref. No.	Part No.	Description	Q'ty	Version
D108	2258100135	1N4002	1	
D109	2058322101	1N4148M, Switching	1	
D110	2258599115	Zener, 6.1BZ	1	
D111	2258100135	1N4002	1	
D112-D116	2058322101	1N4148M, Switching	5	
D117	2258599127	Zener, 18BZ	1	
D118	2258599109	Zener, UZ15.0BSC	1	
D119	2258599103	Zener, UZ 5.1BSC	1	
D120/D121	2258599121	Zener, UZ 6.8BSC	2	
D122/D123	2258100135	1N4002	2	
D124/D125	2258599123	Zener, 8.2DZ	2	
D126/D127	2058322101	1N4148M, Switching	2	
⚠ F101/F102	5508202430	Fuse, NB 2A 250V	2	Dom
⚠	5508202421	Fuse, NB 2A 125V		A
⚠	5508302335	Fuse T 1.6A 250V		D,E
IC101	2178317124	STK4142, Hybrid Power AMP	1	
IC102	2168017132	LC7821, Switching	1	
IC103	2168601105	GD7815, Regulator	1	
IC104	2168601111	GL7915GS, Regulator	1	
IC105-107	2168208104	KIA4559P/KIA7559P, OP AMP	3	
IC108/109	2168010103	MN3007, BBD	2	
IC110-112	2168208104	KIA4559P/KIA7559P, OP AMP	3	
Q101	2208608114	MPSA06Y, NPN, Silicon	1	
Q102/Q103	2208608112	KTD1302, NPN, Silicon	2	
Q104	2208622105	DTA114YS, PNP Silicon	1	
Q105/Q106	2208608112	KTD1302, NPN, Silicon	2	
Q107	2208608104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q108	2208608112	KTD1302, NPN, Silicon	1	
Q109-Q111	2208608104	BKTC3198Y/KTC1815Y, NPN Silicon	3	
Q112	2208622105	DTA114YS, PNP Silicon	1	
Q113-Q115	2208610109	BKTC3199Y	3	
R100	3069473970	Carbon Film 47 kohm 1/5W J	1	
R101/R102	3069102970	Carbon Film 1 kohm 1/5W J	2	
R103/R104	3069104970	Carbon Film 100 kohm 1/5W J	2	
R105/R106	3069913970	Carbon Film 91 kohm 1/5W J	2	
R107/R108	3069102970	Carbon Film 1 kohm 1/5W J	2	
R109/R110	3069104970	Carbon Film 100 kohm 1/5W J	2	
R111/R112	3069913970	Carbon Film 91 kohm 1/5W J	2	
R113/R114	3069621970	Carbon Film 620 ohm 1/5W J	2	
R115/R116	3069433970	Carbon Film 43 kohm 1/5W J	2	
R117	3069101970	Carbon Film 100 ohm 1/5W J	1	
R118	3029222472	Metal Film 2.2 kohm 1W J	1	
R119	3069132970	Carbon Film 1.3 kohm 1/5W J	1	
R120	3069394970	Carbon Film 390 kohm 1/5W J	1	
R121	3069101970	Carbon Film 100 ohm 1/5W J	1	
R122	3069132970	Carbon Film 1.3 kohm 1/5W J	1	
R123	3029222472	Metal Film 2.2 kohm 1W J	1	
R124	3069564970	Carbon Film 560 kohm 1/5W J	1	
R125	3069273970	Carbon Film 27 kohm 1/5W J	1	
R126	3069202970	Carbon Film 2 kohm 1/5W J	1	
R127	3069273970	Carbon Film 27 kohm 1/5W J	1	
R128	3069102970	Carbon Film 1 kohm 1/5W J	1	
R129	3069564970	Carbon Film 560 kohm 1/5W J	1	
R130/R131	3029102472	Metal Film 1 kohm 1W J	2	
R132	3069203970	Carbon Film 20 kohm 1/5W J	1	
R133	3069202970	Carbon Film 2 kohm 1/5W J	1	
R134	3069273970	Carbon Film 27 kohm 1/5W J	1	
R135	3069561970	Carbon Film 560 ohm 1/5W J	1	
R136	3069471970	Carbon Film 470 ohm 1/5W J	1	
R137	3069273970	Carbon Film 27 kohm 1/5W J	1	
R138	3069471970	Carbon Film 470 ohm 1/5W J	1	
R139	3069561970	Carbon Film 560 ohm 1/5W J	1	
R140	3069102970	Carbon Film 1 kohm 1/5W J	1	
R141	3069203970	Carbon Film 20 kohm 1/5W J	1	

Ref. No.	Part No.	Description	Q'ty	Version
R142	3059278582	Cement 0.27 ohm 2W J	1	
R143	3069682970	Carbon Film 6.8 kohm 1/5W J	1	
R144	3069220970	Carbon Film 22 ohm 1/5W J	1	
R145	3059278582	Cement 0.27 ohm 2W J	1	
R146	3069220970	Carbon Film 22 ohm 1/5W J	1	
R147	3069104970	Carbon Film 100 kohm 1/5W J	1	
R148	3069224970	Carbon Film 220 kohm 1/5W J	1	
R149	3069472970	Carbon Film 4.7 kohm 1/5W J	1	
R150	3069682970	Carbon Film 6.8 kohm 1/5W J	1	
R151/R152	3069220970	Carbon Film 22 ohm 1/5W J	2	
R153	3069102970	Carbon Film 1 kohm 1/5W J	1	
R154	3069104970	Carbon Film 100 kohm 1/5W J	1	
R155	3069102970	Carbon Film 1 kohm 1/5W J	1	
R156	3069474970	Carbon Film 470 kohm 1/5W J	1	
R157	3069182970	Carbon Film 1.8 kohm 1/5W J	1	
R158	3069104970	Carbon Film 100 kohm 1/5W J	1	
R159	3069332970	Carbon Film 3.3 kohm 1/5W J	1	
R160	3069101970	Carbon Film 100 ohm 1/5W J	1	
R161/R162	3069104970	Carbon Film 100 kohm 1/5W J	2	
R163	3069101970	Carbon Film 100 ohm 1/5W J	1	
R164/R165	3069472970	Carbon Film 4.7 kohm 1/5W J	2	
R166/R167	3069332970	Carbon Film 3.3 kohm 1/5W J	2	
R168	3069471970	Carbon Film 470 ohm 1/5W J	1	
R169/R170	3069153970	Carbon Film 15 kohm 1/5W J	2	
R171	3069562970	Carbon Film 5.6 kohm 1/5W J	1	
R172/R173	3069332970	Carbon Film 3.3 kohm 1/5W J	2	
R174	3069103970	Carbon Film 10 kohm 1/5W J	1	
R175	3069101970	Carbon Film 100 ohm 1/5W J	1	
R176	3069103970	Carbon Film 10 kohm 1/5W J	1	
R177	3069123970	Carbon Film 12 kohm 1/5W J	1	
R178	3069103970	Carbon Film 10 kohm 1/5W J	1	
R179	3069101970	Carbon Film 100 ohm 1/5W J	1	
R180	3069104970	Carbon Film 100 kohm 1/5W J	1	
R181	3029100470	Metal Film 10 ohm 1W J	1	
R182/R183	3069102970	Carbon Film 1 kohm 1/5W J	2	
R184	3069123970	Carbon Film 12 kohm 1/5W J	1	
R185/R186	3069104970	Carbon Film 100 kohm 1/5W J	2	
R187	3069122970	Carbon Film 1.2 kohm 1/5W J	1	
R188/R189	3069100970	Carbon Film 10 ohm 1/5W J	2	
R190	3069103970	Carbon Film 10 kohm 1/5W J	1	
R191	3069101970	Carbon Film 100 ohm 1/5W J	1	
R192	3069471970	Carbon Film 470 ohm 1/5W J	1	
R193/R194	3069472970	Carbon Film 4.7 kohm 1/5W J	2	
R195	3069153970	Carbon Film 15 kohm 1/5W J	1	
R196-R199	3069471970	Carbon Film 470 ohm 1/5W J	4	
R200	3029221470	Metal Film 220 ohm 1W J	1	
R201/R203	3069102970	Carbon Film 1 kohm 1/5W J	3	
R204	3069223970	Carbon Film 22 kohm 1/5W J	1	
R205/R206	3069229970	Carbon Film 2.2 ohm 1/5W J	2	
R207	3069101970	Carbon Film 100 ohm 1/5W J	1	
R208/R209	3069332970	Carbon Film 3.3 kohm 1/5W J	2	
R210	3069101970	Carbon Film 100 ohm 1/5W J	1	
R211	3069332970	Carbon Film 3.3 kohm 1/5W J	1	
R212/R214	3069104970	Carbon Film 100 kohm 1/5W J	3	
R215	3069472970	Carbon Film 4.7 kohm 1/5W J	1	
R216	3069104970	Carbon Film 100 kohm 1/5W J	1	
R217	3069474970	Carbon Film 470 kohm 1/5W J	1	
R218	3069103970	Carbon Film 10 kohm 1/5W J	1	
R219	3069101970	Carbon Film 100 ohm 1/5W J	1	
R220	3069124970	Carbon Film 120 kohm 1/5W J	1	
R221	3069473970	Carbon Film 47 kohm 1/5W J	1	
R222	3069332970	Carbon Film 3.3 kohm 1/5W J	1	
R223	3069432970	Carbon Film 4.3 kohm 1/5W J	1	
R224	3069124970	Carbon Film 120 kohm 1/5W J	1	

Ref. No.	Part No.	Description					Q'ty	Version
R225/R226	3069101970	Carbon Film	100 ohm	1/5W	J		2	
R227	3069103970	Carbon Film	10 kohm	1/5W	J		1	
R228	3069822970	Carbon Film	8.2 kohm	1/5W	J		1	
R229	3029100470	Metal Film	10 ohm	1W	J		1	
R230	3069562970	Carbon Film	5.6 kohm	1/5W	J		1	
R231	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R232	3069563970	Carbon Film	56 kohm	1/5W	J		1	
R233	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R234	3069181970	Carbon Film	180 ohm	1/5W	J		1	
R235	3069124970	Carbon Film	120 kohm	1/5W	J		1	
R236	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R237	3069563970	Carbon Film	56 kohm	1/5W	J		1	
R238	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R239	3069563970	Carbon Film	56 kohm	1/5W	J		1	
R240	3069394970	Carbon Film	390 kohm	1/5W	J		1	
R241	3069222970	Carbon Film	2.2 kohm	1/5W	J		1	
R242/R243	3069101970	Carbon Film	100 ohm	1/5W	J		2	
R244/R245	3069104970	Carbon Film	100 kohm	1/5W	J		2	
R246/R249	3069393970	Carbon Film	39 kohm	1/5W	J		4	
R250/R251	3069562970	Carbon Film	5.6 kohm	1/5W	J		2	
R252	3069474970	Carbon Film	470 kohm	1/5W	J		1	
R253	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R254	3069393970	Carbon Film	39 kohm	1/5W	J		1	
R255	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R256	3069752970	Carbon Film	7.5 kohm	1/5W	J		1	
R257/R258	3029150570	Metal Film	15 ohm	2W	J		2	
R259	3029680570	Metal Film	68 ohm	2W	J		1	
R260	3069332970	Carbon Film	3.3 kohm	1/5W	J		1	
R261	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R262	3069473970	Carbon Film	47 kohm	1/5W	J		1	
RLY101	5528001810	Relay, OSA-SS224D					1	
P1-1	**054101010009**	**ASS'Y P.C.B VOLUME**						
22	3208067410	VR Motor(Main)					1	
CNT04	436207183332	Lead Ass'y 7P 180mm, to Main B'D					1	
CNT13	4428507900	Wafer BTMK7S-1R					1	
CNT14	4428504900	Wafer BTMK4P-IS					1	
C301/R302	3479210971	Electrolytic SA	1 µF	50V	M		2	
C303	3479347041	Electrolytic SG	47 µF	25 V	M		1	
C304	3519330935	Ceramic Tublelar	33 pF	50 V	J		1	
C305	3679104120	Mylar	0.1 µF	100 V	J		1	
C306/R307	3479247971	Electrolytic SA	4.7 µF	50 V	M		2	
C308	3479347041	Electrolytic SG	47 µF	25 V	M		1	
C309/R310	3479210971	Electrolytic SA	1 µF	50 V	M		2	
C311	3519330935	Ceramic Tublelar	33 pF	50 V	J		1	
C312	3479247971	Electrolytic SA	4.7 µF	50 V	M		1	
C313	3479347041	Electrolytic SG	47 µF	25 V	M		1	
C314/R315	3479247971	Electrolytic SA	4.7 µF	50 V	M		2	
C316/R317	3519330935	Ceramic Tublelar	33 pF	50 V	J		2	
C318	3479347041	Electrolytic SG	47 µF	25 V	M		1	
C319/R320	3479233971	Electrolytic SA	3.3 µF	50 V	M		2	
C321/R322	3479347041	Electrolytic SG	47 µF	25 V	M		2	
C323	3519103530	Ceramic Tublelar	0.01 µF	50 V	Z		1	
D301	2258599121	Zener, UZ 6.8BSC					1	
D302/D303	2258599103	Zener, UZ 5.1BSC					2	
IC301/302	2188206107	KIA 8259, OP AMP					2	
Q301	2208622105	DTA114YS, PNP Silicon					1	
Q302	2218207106	FET, 2SK117Y					1	
Q303	2208622106	DTC114YS, NPN, Silicon					1	
Q304	2208606114	MPSA06Y, NPN, Silicon					1	
Q305	2208206113	MPSA56Y, NPN, Silicon					1	
Q306	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon					1	
Q307	2208606114	MPSA06Y, NPN, Silicon					1	
Q308	2208206113	MPSA56Y, NPN, Silicon					1	

Ref. No.	Part No.	Description					Q'ty	Version
Q309	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon					1	
Q310	2208622105	DTA114YS, PNP Silicon					1	
Q311	2208610109	BKTC3199Y					1	
R301	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R302	3069101970	Carbon Film	100 ohm	1/5W	J		1	
R303	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R304	3069332970	Carbon Film	3.3 kohm	1/5W	J		1	
R305	3069106970	Carbon Film	10M ohm	1/5W	J		1	
R306	3069335970	Carbon Film	3.3M ohm	1/5W	J		1	
R307	3069473970	Carbon Film	47 kohm	1/5W	J		1	
R308	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R309	3069622970	Carbon Film	6.2 kohm	1/5W	J		1	
R310	3069101970	Carbon Film	100 ohm	1/5W	J		1	
R311	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R312	3069222970	Carbon Film	2.2 kohm	1/5W	J		1	
R313	3069332970	Carbon Film	3.3 kohm	1/5W	J		1	
R314	3069104970	Carbon Film	100 kohm	1/5W	J		1	
R315	3069101970	Carbon Film	100 ohm	1/5W	J		1	
R316	3069622970	Carbon Film	6.2 kohm	1/5W	J		1	
R317	3069222970	Carbon Film	2.2 kohm	1/5W	J		1	
R318/R319	3069101970	Carbon Film	100 ohm	1/5W	J		2	
R320	3069473970	Carbon Film	47 kohm	1/5W	J		1	
R321	3069222970	Carbon Film	2.2 kohm	1/5W	J		1	
R322	3069101970	Carbon Film	100 ohm	1/5W	J		1	
R323	3069222970	Carbon Film	2.2 kohm	1/5W	J		1	
R324	3069101970	Carbon Film	100 ohm	1/5W	J		1	
R325	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R326	3069101970	Carbon Film	100 ohm	1/5W	J		1	
R327	3069152970	Carbon Film	1.5 kohm	1/5W	J		1	
R328	3069472970	Carbon Film	4.7 kohm	1/5W	J		1	
R329	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R330	3069152970	Carbon Film	1.5 kohm	1/5W	J		1	
R331	3069472970	Carbon Film	4.7 kohm	1/5W	J		1	
R332	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R333/R334	3069682970	Carbon Film	6.8 kohm	1/5W	J		2	
R335-R337	3069102970	Carbon Film	1 kohm	1/5W	J		3	
R338	3069103970	Carbon Film	10 kohm	1/5W	J		1	
R339	3069102970	Carbon Film	1 kohm	1/5W	J		1	
R340	3069562970	Carbon Film	5.6 kohm	1/5W	J		1	
R341	3069102970	Carbon Film	1 kohm	1/5W	J		1	
P1-3	**054101010010**	**ASS'Y P.C.B HEADPHONE**						
17	4438005520	Jack MIC, 9P					2	Dom,G,E,PT,INDO,PH
	4438005520	Jack MIC, 9P					1	AA VS,D,Migros
CNT10	436105303321	Lead Ass'y 5P 30mm, to Main					1	
C601/C602	3519561935	Ceramic Tublelar	560 pF	50 V	J		2	
R601/R602	3029271470	Metal Film	270 ohm	1W	J		2	
R603/R604	3069152970	Carbon Film	1.5 kohm	1/5W	J		2	
P1-4	**054100810015**	**ASS'Y P.C.B PREOUT Dom(Only)**						
35	4438110010	Jack RCA 1P					1	Dom
CNT07	436202183132	Lead Ass'y 2P 180mm					1	
P1-5	**054101010011**	**ASS'Y P.C.B POWER**						
42	4818006510	SW Voltage Sel.					1	PT Indo
43	4448105510	Outlet AC					1	Dom
CNT12	4428525780	Wafer AC 2P					1	Dom,G
CNT13	4428525800	Wafer AC 4P					1	A
F701	⚠ 5508202230	Fuse, NB 1.5A 250 V					1	D,E
	⚠ 5508202521	Fuse, NB 2.5A 250 V					1	
	⚠ 5508302135	Fuse, TL 1.25A 250 V					1	
F801	⚠ 5508302535	Fuse, TL 2.5A 250 V					1	B
F802	⚠ 5508302135	Fuse, TL 1.25A 250 V					1	B
R701	3009335373	Carbon Film	3.3M ohm	1/2W	J		1	A

Ref. No.	Part No.	Description	Q'ty	Version
TRANS ⚠	2828000747	Power Transformer, 120 V 60 Hz	1	A
⚠	2828000757	Power Transformer, 220V 60 Hz	1	Dom
⚠	2828000737	Power Transformer, 230V 50 Hz	1	D
⚠	2828000817	Power Transformer, 240V 50 Hz	1	E
⚠	2828000837	Power Transformer, 110/220V 60 Hz	1	B
	0524380001480	Ass'y Posistor	1	
	4255001010	Clip Fuse	6	
P2-1	**054101010012**	**ASS'Y P.C.B TUNER**		
34	4408107110	Terminal ANT	1	Dom,AAVS,P/B
	4408101610	Terminal ANT	1	[illegible]
CNT06	4428525540	Wafer 4P, to Front B'D	1	
CNT12	4428516610	Wafer 7P, to Front B'D	1	
CNT16		Wafer 3P, to Switch B'D	1	B
IC401	2168417119	LA1851NM	1	
IC402	2138017136	LM7001M	1	
Q401/Q402	2207406100	KTC3911	2	
Q403-Q405	2207606012	TR Chip, KRC111S SOT23	3	
Q406	2207206008	TR Chip, KRA107S SOT23	1	
Q407	2207406100	KTC3911	1	
Q408	2218211100	FET, 2SK168D	1	
Q409	2207606002	TR Chip, KTC3880 SOT23	1	
Q410-Q412	2207206008	TR Chip, KRA107S SOT23	3	
Q413-Q418	2207606001	TR Chip, KTC3875 SOT23	5	LW
Q420/Q421	2207606003	KTD1304	2	
L401/L402	2658301100	Coil MPX 19 kHz FB-7SG	2	
L403	2648601430	20.8mH	1	D
L404	2628000070	Coil, FM-DET-B(292TEA-K5579X)	1	
L405	2628000060	Coil, FM-DET-A(292TEA-K5580A)	1	
L406	2848001250	Coil, AM-IFT P-7SB	1	
L407	2638201150	Coil, AM-OSC	1	
L408	2608201120	Coil, AM-ANT	1	
L409	2608201130	Coil, AM-ANT	1	LW
L410	2638401060	AM-OSC	1	LW
CF401	3908001380	SFZ450F	1	
CF402	3908011001	SFE10.7MA8	1	A,Dom
CF402	3908011011	SFE10.7MS3G	1	D,E,F,G
CF403	3908011001	SFE10.7MA8	1	A,Dom
CF403	3908011011	SFE10.7MS3G	1	D,E,F,G
D401	2258599103	Zener, UZ 5.1BSC	1	
D402/D403	2058322101	1N4148M, Switching	2	
D404	2258599100	Zener, DZ3.3V	1	
VD401	2058819106	KV1236Z	1	
VD401	2058819105	KV1235Z	1	LW
FE401	3928801930	FE306-A15	1	
FE401	3928801970	FE407-A15	1	E,F
FE401	3928818890	FE407-G60	1	D
X401	3908101031	X-TAL, 7.2 MHz	1	
X402	3938131600	Resonator, CSB456F15	1	
TC401	3838001160	Trimmer, 20pF		
TC402	3838001150	Trimmer, 10pF	1	
TC403/404	3838001160	Trimmer, 20pF	2	LW
	2608207361	ANT AM Loop Stand Strip Wire	1	Dom,A
	2608207360	ANT AM Loop Stand Strip Wire	1	D,E,F,G
C401/C402	3679392120	Mylar 0.0039 µF 100 V J	2	
C403	3479233971	Electrolytic SA 3.3 µF 50 V M	1	
C404/C405	3579222530	Ceramic Disc 0.0022 µF 50 V Z	2	
C406	3479233971	Electrolytic SA 3.3 µF 50 V M	1	
C407	3579223530	Ceramic Disc 0.022 µF 50 V Z	1	
C408	3479347041	Electrolytic SG 47 µF 25 V M	1	
C409/C410	3479233971	Electrolytic SA 3.3 µF 50 V M	2	
C411	3679622120	Mylar 0.0082 µF 100 V J	1	A,Dom
C411	3679562120	Mylar 0.0056 µF 100 V J	1	D,E,F,G
C412	3679622120	Mylar 0.0082 µF 100 V J	1	A,Dom

Ref. No.	Part No.	Description	Q'ty	Version
C412	3679562120	Mylar 0.0056 µF 100 V J	1	D,E,F,G
C413	3479210071	Electrolytic SA 10 µF 50 V M	1	
C413	3479233971	Electrolytic SA 3.3 µF 50 V M	1	D,E,F,G
C414	3479210971	Electrolytic SA 1 µF 50 V M	1	
C415	3479210071	Electrolytic SA 10 µF 50 V M	1	
C416	3619471110	Poly 470 pF 50 V	1	
C417	3479210071	Electrolytic SA 10 µF 50 V M	1	
C418	3479210971	Electrolytic SA 1 µF 50 V M	1	
C419	3479233871	Electrolytic SA 0.33 µF 50 V M	1	
C420	3479210071	Electrolytic SA 10 µF 50 V M	1	
C421	3539223820	Ceramic Chip 0.022 µF 50 V K	1	
C422	3409210131	Electrolytic SA 100 µF 16 V M	1	
C423	3539330210	Ceramic Chip 33 pF 50 V J	1	
C424	3539223820	Ceramic Chip 0.022 µF 50 V K	1	
C425	3479347041	Electrolytic SG 47 µF 25 V M	1	
C426	3539223820	Ceramic Chip 0.022 µF 50 V K	1	
C427/C428	3539330210	Ceramic Chip 33 pF 50 V J	2	
C429-C431	3539101210	Ceramic Chip 100 pF 50 V J	3	
C432	3479233971	Electrolytic SA 3.3 µF 50 V M	1	
C433	3679392120	Mylar 0.0039 µF 100 V M	1	
C434	3679183120	Mylar 0.018 µF 100 V M	1	
C435	3679473120	Mylar 0.047 µF 100 V J	1	
C436	3539103820	Ceramic Chip 0.01 µF 50 V K	1	
C437	3539223820	Ceramic Chip 0.022 µF 50 V K	1	
C438	3479347041	Electrolytic SG 47 µF 25 V M	1	
C439	3539470210	Ceramic Chip 47 pF 50 V J	1	
C440	3479210971	Electrolytic SA 1 µF 50 V M	1	
C441	3539223210	Ceramic Chip 0.022 µF 50 V K	1	
C442	3539473060	Ceramic Chip 0.047 µF 50 V Z	1	
C443	3539223210	Ceramic Chip 0.022 µF 50 V K	1	
C444	3539103210	Ceramic Chip 0.01 µF 50 V Z	1	
C445	3479247871	Electrolytic SA 0.47 µF 50 V M	1	
C446	3479347041	Electrolytic SG 47 µF 25 V M	1	
C447/C448	3539223210	Ceramic Chip 0.022 µF 50 V K	2	
C449	3409210131	Electrolytic SA 100 µF 16 V M	1	
C450	3539223210	Ceramic Chip 0.022 µF 50 V K	1	
C451	3479347041	Electrolytic SG 47 µF 25 V M	1	
C452	3539223210	Ceramic Chip 0.022 µF 50 V K	1	
C460	3539103210	Ceramic Chip 0.01 µF 50 V K	1	LW
C461	3539150210	Ceramic Chip 15 pF 50 V J	1	LW
C462	3539181210	Ceramic Chip 180 pF 50 V J	1	LW
C463	3539270210	Ceramic Chip 27 pF 50 V J	1	LW
C464	3539223210	Ceramic Chip 0.022 µF 50 V K	1	LW
C465	3539223210	Ceramic Chip 0.022 µF 50 V K	1	D,E,F,G
C466	3539620210	Ceramic Chip 82 pF 50 V J	1	D
C467	3539101210	Ceramic Chip 100 pF 50 V J	1	D
R401/R402	3099332870	RES Chip 3.3 kohm 1/10W J	2	
R403	3099302870	RES Chip 3 kohm 1/10W J	1	
R404	3099512870	RES Chip 5.1 kohm 1/10W J	1	A,Dom
R405	3099512870	RES Chip 5.1 kohm 1/10W J	1	
R406/R407	3099624870	RES Chip 620 kohm 1/10W J	2	
R408	3099302870	RES Chip 3 kohm 1/10W J	1	A,Dom
R409	3099221870	RES Chip 220 ohm 1/10W J	1	
R410/R411	3099103870	RES Chip 10 kohm 1/10W J	2	
R412	3099102870	RES Chip 1 kohm 1/10W J	1	
R413	3099332870	RES Chip 3.3 kohm 1/10W J	1	
R414	3099512870	RES Chip 5.1 kohm 1/10W J	1	
R415	3099101870	RES Chip 100 ohm 1/10W J	1	
R416	3099221870	RES Chip 220 ohm 1/10W J	1	
R417	3099822870	RES Chip 8.2 kohm 1/10W J	1	
R418	3099332870	RES Chip 3.3 kohm 1/10W J	1	
R419	3099393870	RES Chip 39 kohm 1/10W J	1	A,Dom
R420	3099221870	RES Chip 220 ohm 1/10W J	1	
R421	3099223870	RES Chip 22 kohm 1/10W J	1	

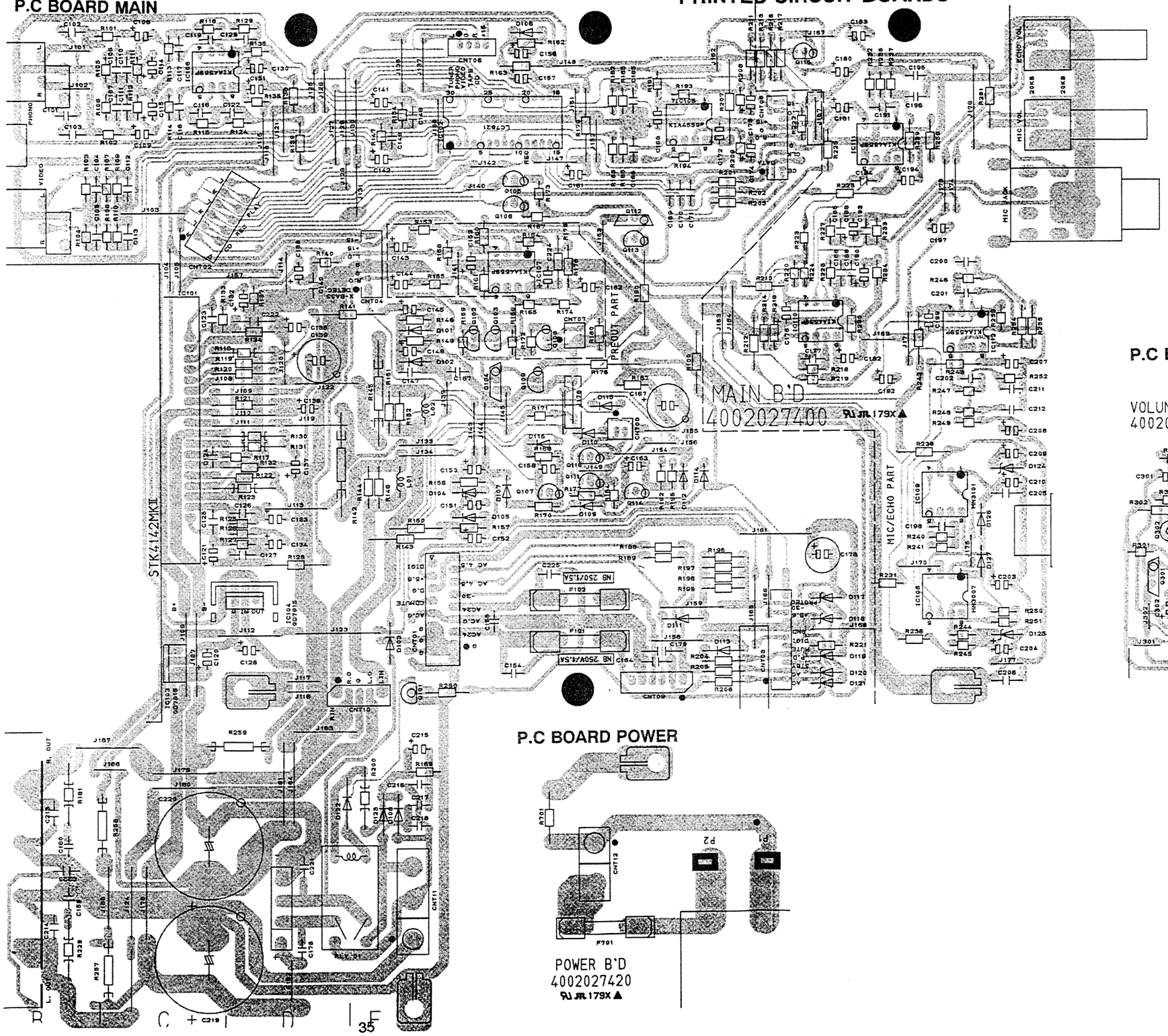
Ref. No.	Part No.	Description	Q'ty	Version
R422	3099393870	RES Chip 39 kohm 1/10W J	1	
R423	3099103870	RES Chip 10 kohm 1/10W J	1	
R424	3099102870	RES Chip 1 kohm 1/10W J	1	
R425	3099123870	RES Chip 12 kohm 1/10W J	1	A,Dom
R426-R428	3099102870	RES Chip 1 kohm 1/10W J	3	
R429	3099152870	RES Chip 1.5 kohm 1/10W J	1	
R430	3099821870	RES Chip 820 ohm 1/10W J	1	
R431	3099103870	RES Chip 10 kohm 1/10W J	1	
R432-R435	3099101870	RES Chip 100 ohm 1/10W J	4	
R436	3099331870	RES Chip 330 ohm 1/10W J	1	
R437	3099332870	RES Chip 3.3 kohm 1/10W J	1	A,Dom
R438/R439	3099331870	RES Chip 330 ohm 1/10W J	2	
R440	3099181870	RES Chip 180 ohm 1/10W J	1	A,Dom
R441	3099561870	RES Chip 560 ohm 1/10W J	1	A,Dom
R442	3099104870	RES Chip 100 kohm 1/10W J	1	LW
R443	3099104870	RES Chip 100 kohm 1/10W J	1	
R444/R445	3099821870	RES Chip 820 ohm 1/10W J	2	
R450-R453	3099473870	RES Chip 47 kohm 1/10W J	4	LW
R454	3099155870	RES Chip 1.5M ohm 1/10W J	1	LW
R455/R456	3099473870	RES Chip 47 kohm 1/10W J	2	LW
R457/R458	3099104870	RES Chip 100 kohm 1/10W J	2	D,E,F,G
R459	3099104870	RES Chip 100 kohm 1/10W J	1	LW
R460	3029331472	Metal Film 330 ohm 1W	1	
VR401	3248020343	RES Semi EVN-DJAA03B24	1	
VR402	3248020243	RES Semi EVN-DJAA03B23	1	
VR403	3248050343	RES Semi EVN-DJAA03B54	1	
P2-2	**054100210013**	**ASS'Y P.C.B SELECTOR**	**B (Only)**	
CNT15		Water 3P, to Tuner B'D	1	B
CNT16		Lead Ass'y 2P	1	B
C490/C491	3679333120	Mylar 0.033 µF 100 V J	2	B
R499	3099333870	RES Chip 33 kohm 1/10W J	1	B
P2	**054101010014**	**ASS'Y P.C.B FRONT**		
18	6045010110	Guide Sensor	1	
19	4658003710	SW Tact	23	
20	6715019710	Spacer Rubber	2	
CNT03	436211243332	Lead Ass'y 11P 240mm, to Main B'D	1	
CNT05	436209163332	Lead Ass'y 9P 160mm, to Main B'D	1	
CNT12	436209163332	Lead Ass'y 7P 180mm, to Tuner B'D	1	
CNT13	4428507901	Receptacle BTMK7S-1S	1	
CNT14	4428504901	Receptacle BTMK4S-1S	1	
CNT15		Lead Ass'y 3P	1	B
IC500	2138322164	CXP 82316-143Q, CPU	1	
IC501	2168000113	LM324, OP AMP	1	
IC502	21688000114	KA4558, OP AMP	1	
IC503	2168206107	KIA 6259, OP AMP	1	
IC504/505	2138001130	GD 4051D, Switching	2	
Q501	2207606001	TR Chip, KTC3875 SOT23	1	
FIP	2328130309	FIRP, 13JM8	1	
X-501	3938131750	Resonator, CST10.00MTW	1	
RCVR	2408004005	Sensor, RPM-600CBR-L	1	
C501-C506	3539101210	Ceramic Chip 100 pF 50 V J	6	
C507/C508	3539122820	Ceramic Chip 0.0012 µF 50 V K	2	
C509/C510	3539562820	Ceramic Chip 0.0056 µF 50 V K	2	
C511/C512	3539223820	Ceramic Chip 0.022 µF 50 V K	2	
C513/C514	3539823060	Ceramic Chip 0.082 µF 50 V K	2	
C515-C516	3539103820	Ceramic Chip 0.01 µF 50 V K	2	
C517	3539222820	Ceramic Chip 0.0022 µF 50 V K	1	
C518	3539151210	Ceramic Chip 150 pF 50 V J	1	
C519	3539222820	Ceramic Chip 2200 pF 50 V K	1	
C520	3539681210	Ceramic Chip 680 pF 50 V J	1	
C521	3539823060	Ceramic Chip 0.082 µF 50 V Z	1	
C522	3539562820	Ceramic Chip 0.0056 µF 50 V K	1	

Ref. No.	Part No	Description	Q'ty	Version
C523/C524	3539473060	Ceramic Chip 0.047 µF 50 V Z	2	
C525	3539562820	Ceramic Chip 0.0056 µF 50 V K	1	
C526	3539823060	Ceramic Chip 0.082 µF 50 V Z	1	
C527	3539681210	Ceramic Chip 680 pF 50 V J	1	
C528	3539222820	Ceramic Chip 2200 pF 50 V K	1	
C529/C530	3539103820	Ceramic Chip 0.01 µF 50 V K	2	
C531	3539222820	Ceramic Chip 2200 pF 50 V K	1	
C532	3539151210	Ceramic Chip 150 pF 50 V J	1	
C533/C534	3539220210	Ceramic Chip 22 pF 50 V J	2	
C535	3539104060	Ceramic Chip 0.1 µF 50 V Z	1	
C536	3479233971	Electrolytic SA 3.3 µF 50 V M	1	
C537	3479210071	Electrolytic SA 10 µF 50 V M	1	
C538	3479347041	Electrolytic SG 47 µF 25 V M	1	
C539/C540	3479233871	Electrolytic SA 0.33 µF 50 V M	2	
C541	3479210071	Electrolytic SA 10 µF 50 V M	1	
C542	3479310121	Electrolytic SG 100 µF 10 V M	1	
C543	3468233861	Electrolytic SA 3.3 µF 50 V M	1	
C544-C546	3479210071	Electrolytic SA 10 µF 50 V M	3	
C547-C548	3479247971	Electrolytic SA 4.7 µF 50 V M	2	
C549	3479347041	Electrolytic SG 47 µF 25 V M	1	
C550	3438147312	Electrolytic SA 0.047 µF 5.5 V	1	
C551	3479247971	Electrolytic SA 4.7 µF 50 V M	1	
C552	3479310121	Electrolytic SG 100 µF 100 V M	1	
C553/C554	3479347041	Electrolytic SG 47 µF 25 V M	2	
C555-C559	3479247971	Electrolytic SA 4.7 µF 50 V M	5	
C560-C565	3539104060	Ceramic Chip 0.1 µF 50 V Z	6	
D501-D511	2058322101	1N4148M, Switching		11
D512/D513	2258599130	Zener, UZ 7.5BSC		2
D514-D18	2058322101	1N4148M, Switching		5
D519/D520	2371124701	LED, SLR-34URCF25		2
D521-D523	2058322101	1N4148M, Switching		3
R501	3099223870	REC Chip 22 kohm 1/10W J	1	
R502	3099474870	REC Chip 470 kohm 1/10W J	1	
R504	3099472870	REC Chip 4.7 kohm 1/10W J	1	
R505-R510	3099473870	REC Chip 47 kohm 1/10W J	6	
R511	3099103870	REC Chip 10 kohm 1/10W J	1	
R512	3099473870	REC Chip 47 kohm 1/10W J	1	
R513	3099333870	REC Chip 33 kohm 1/10W J	1	
R514	3099202870	REC Chip 2 kohm 1/10W J	1	
R515	3099102870	REC Chip 1 kohm 1/10W J	1	
R516	3099473870	REC Chip 47 kohm 1/10W J	1	
R517/R518	3099221870	REC Chip 220 ohm 1/10W J	2	
R519-R524	3099102870	REC Chip 1 kohm 1/10W J	6	
R525-R530	3099124870	REC Chip 120 kohm 1/10W J	6	
R531-R538	3099102870	REC Chip 1 kohm 1/10W J	8	
R539/R540	3099101870	REC Chip 100 ohm 1/10W J	2	
R541-R544	3099104870	REC Chip 100 kohm 1/10W J	4	
R545/R546	3099333870	REC Chip 33 kohm 1/10W J	2	
R547	3099104870	REC Chip 100 kohm 1/10W J	1	
R548	3099563870	REC Chip 56 kohm 1/10W J	1	
R549	3099104870	REC Chip 100 kohm 1/10W J	1	
R550	3099683870	REC Chip 68 kohm 1/10W J	1	
R551	3099223870	REC Chip 22 kohm 1/10W J	1	
R552	3099153870	REC Chip 15 kohm 1/10W J	1	
R553	3099563870	REC Chip 56 kohm 1/10W J	1	
R554/R555	3099333870	REC Chip 33 kohm 1/10W J	2	
R556	3099243870	REC Chip 24 kohm 1/10W J	1	
R557	3099103870	REC Chip 10 kohm 1/10W J	1	
R558	3099223870	REC Chip 22 kohm 1/10W J	1	
R559	3099683870	REC Chip 68 kohm 1/10W J	1	
R560	3099273870	REC Chip 27 kohm 1/10W J	1	
R561	3099153870	REC Chip 15 kohm 1/10W J	1	
R562	3099333870	REC Chip 33 kohm 1/10W J	1	
R563	3099223870	REC Chip 22 kohm 1/10W J	1	

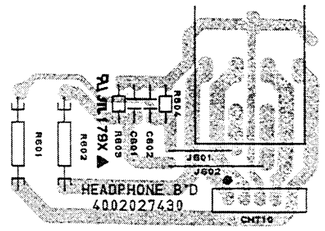
Ref. No.	Part No	Description	Q'ty	Version
R564	3099683870	REC Chip 68 kohm 1/10W J	1	
R565	3099563870	REC Chip 56 kohm 1/10W J	1	
R566	3099333870	REC Chip 33 kohm 1/10W J	1	
R567	3099243870	REC Chip 24 kohm 1/10W J	1	
R568	3099103870	REC Chip 10 kohm 1/10W J	1	
R569	3099223870	REC Chip 22 kohm 1/10W J	1	
R570	3099683870	REC Chip 68 kohm 1/10W J	1	
R571	3099273870	REC Chip 27 kohm 1/10W J	1	
R572	3099104870	REC Chip 100 kohm 1/10W J	1	
R573	3099563870	REC Chip 56 kohm 1/10W J	1	
R574	3099104870	REC Chip 100 kohm 1/10W J	1	
R575/R576	3099563870	REC Chip 56 kohm 1/10W J	2	
R577	3099474870	REC Chip 470 kohm 1/10W J	1	
R578-R581	3099471870	REC Chip 470 kohm 1/10W J	4	
R582	3099203870	REC Chip 20 kohm 1/10W J	1	
R583/R584	3099183870	REC Chip 18 kohm 1/10W J	2	
R585/R586	3099203870	REC Chip 20 kohm 1/10W J	2	
R587	3099152870	REC Chip 1.5 kohm 1/10W J	1	
R588/R589	3099102870	REC Chip 1 kohm 1/10W J	2	
R590	3099122870	REC Chip 1.2 kohm 1/10W J	1	
R591	3099102870	REC Chip 1 kohm 1/10W J	1	
R592	3099623870	REC Chip 62 kohm 1/10W J	1	
R593-R595	3099513870	REC Chip 51 kohm 1/10W J	3	
R596	3099563870	REC Chip 56 kohm 1/10W J	1	
R597-R600	3099683870	REC Chip 68 kohm 1/10W J	4	
R601	3099821870	REC Chip 820 ohm 1/10W J	1	
R602	3099223870	REC Chip 22 kohm 1/10W J	1	
R603	3099683870	REC Chip 68 kohm 1/10W J	1	
R604-R606	3099821870	REC Chip 820 ohm 1/10W J	3	
R607	099561870	REC Chip 5560 ohm 1/10W J	1	
R608	3099221870	REC Chip 220 ohm 1/10W J	1	
R609-R611	3099103870	REC Chip 10 kohm 1/10W J	3	
R612	3099223870	REC Chip 22 kohm 1/10W J	1	
R613-R615	3099473870	REC Chip 47 kohm 1/10W J	3	
R616	3099102870	REC Chip 1 kohm 1/10W J	1	

PRINTED CIRCUIT BOARDS

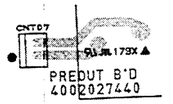
P.C BOARD MAIN



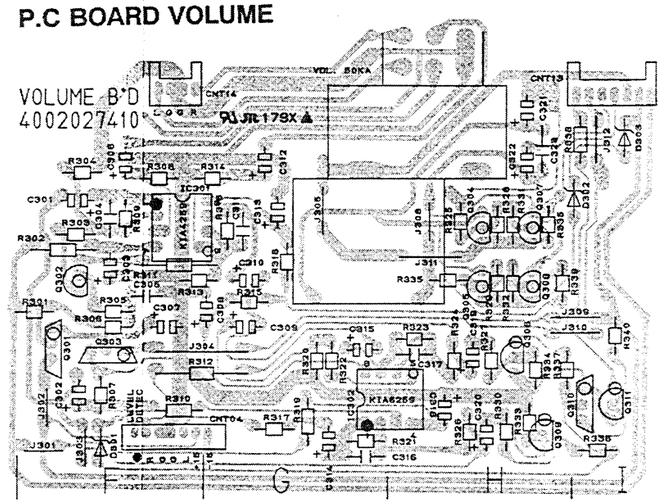
P.C BOARD HEAD PHONE



P.C BOARD PREOUT

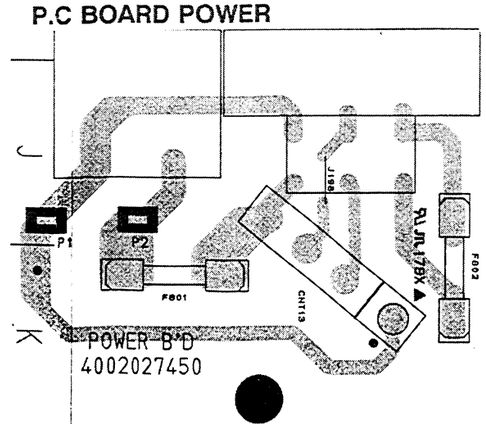


P.C BOARD VOLUME

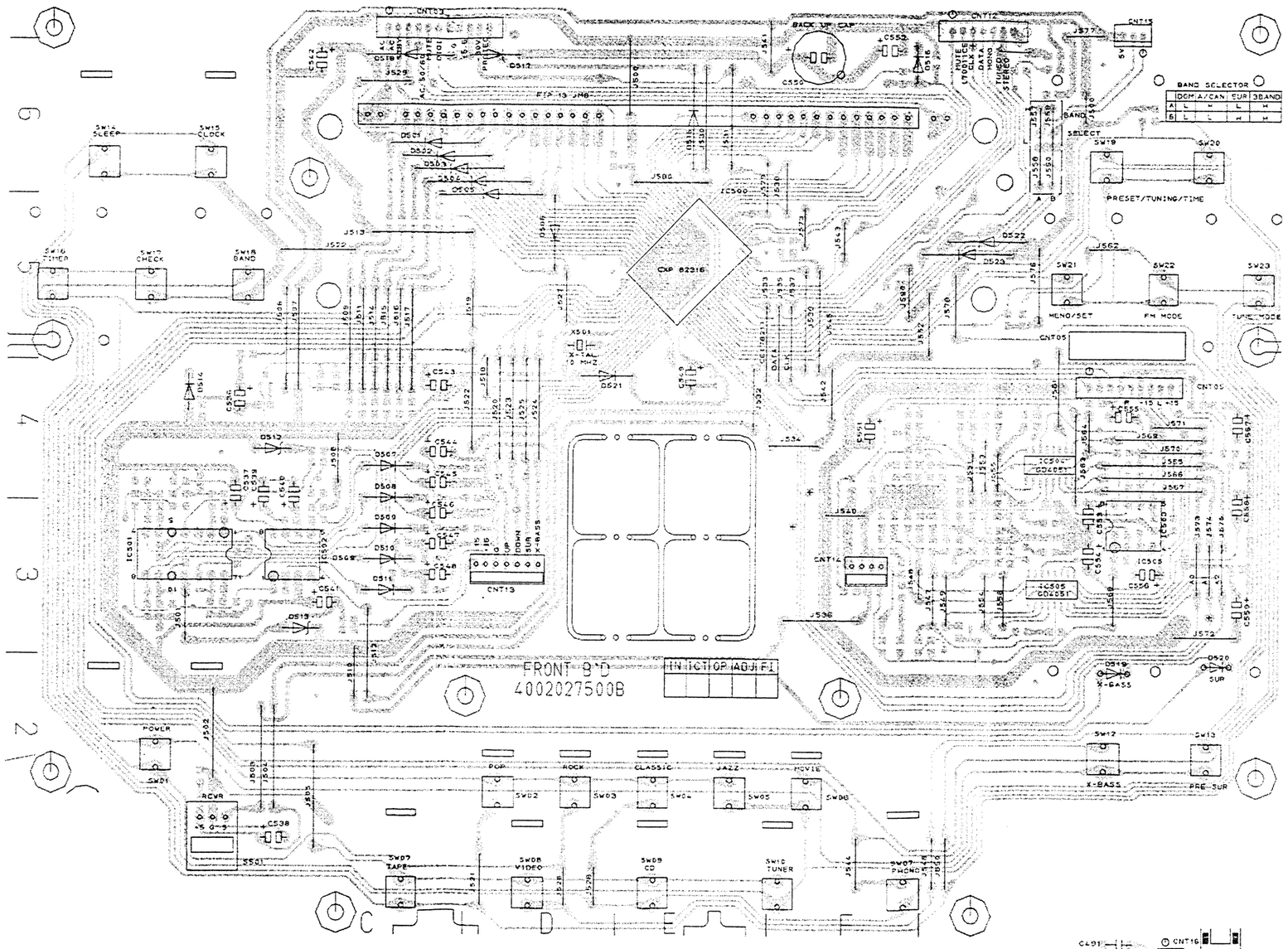


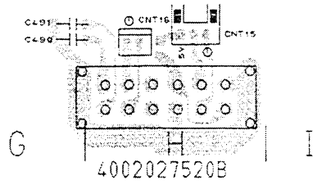
P.C BOARD POWER

P.C BOARD POWER

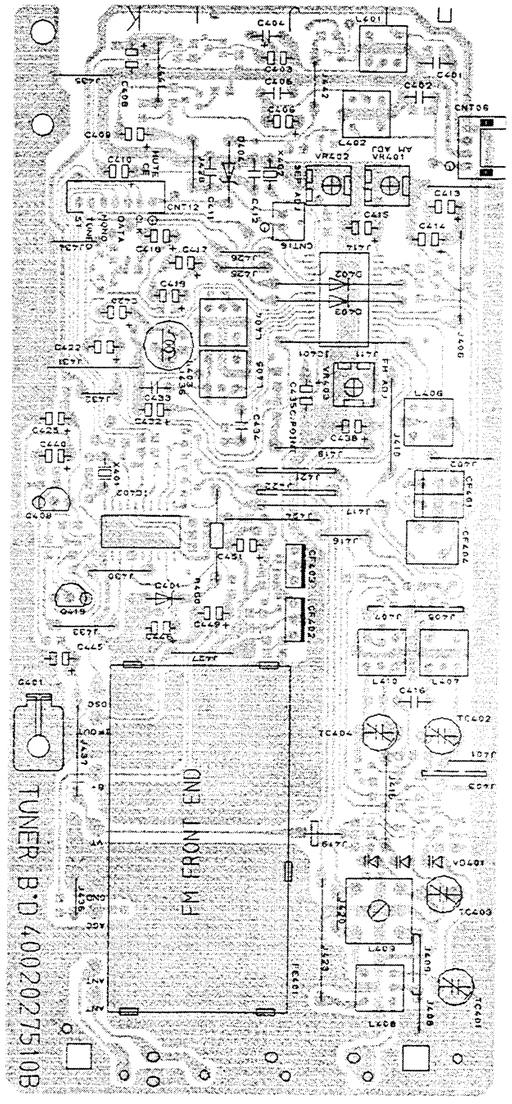


P.C BOARD FRONT





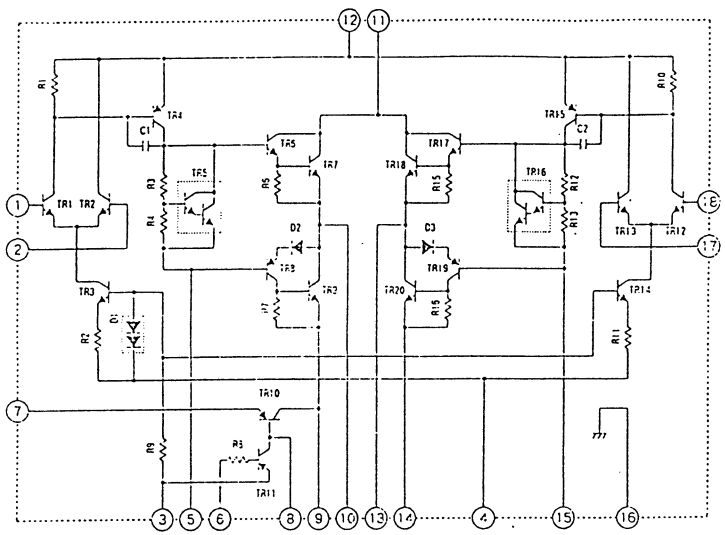
P.C BOARD TUNER



SEMICONDUCTOR LEAD IDENTIFICATION & INTERNAL DIAGRAM

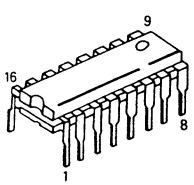
STK4142 Ⅱ: IC101

Block Diagram

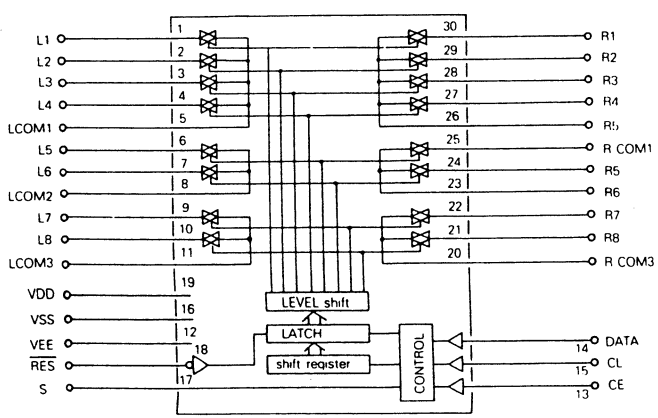


LC7821: IC102

Package Outline

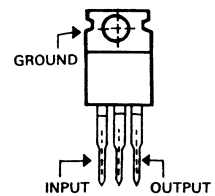


Block Diagram

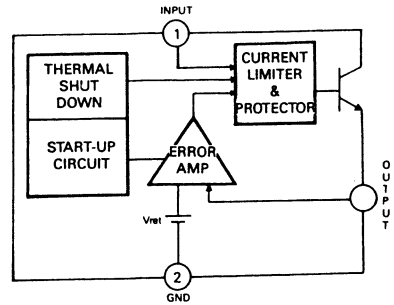


GD7815: IC103

Front View

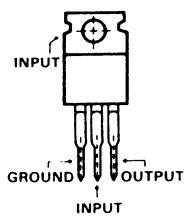


Block Diagram

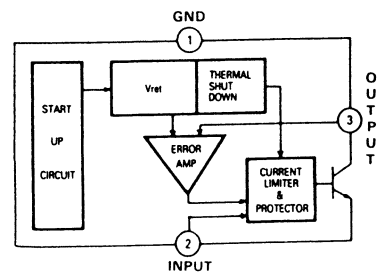


GD7915: IC104

Front View

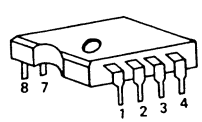


Block Diagram

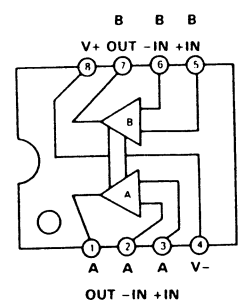


KIA4559P: IC105, IC106, IC107, IC110, IC111, IC112
KIA6259P: IC301, IC302, IC503

Package Outline

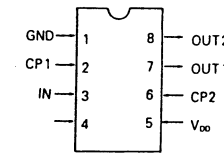


Block Diagram

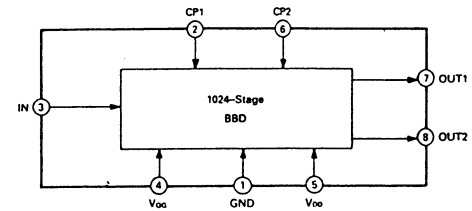


MN300T: IC108

Top View

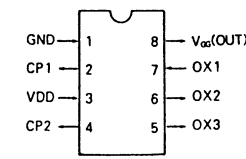


Block Diagram



MN3101: IC109

Top View



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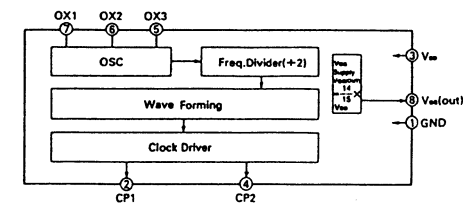
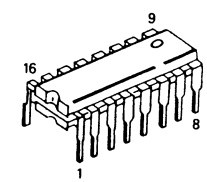


LM7001: IC402

Package Outline



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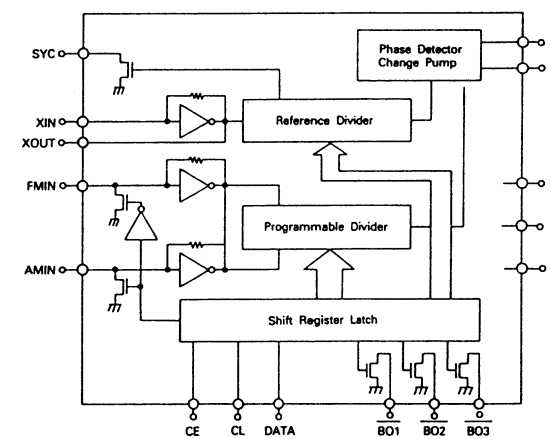
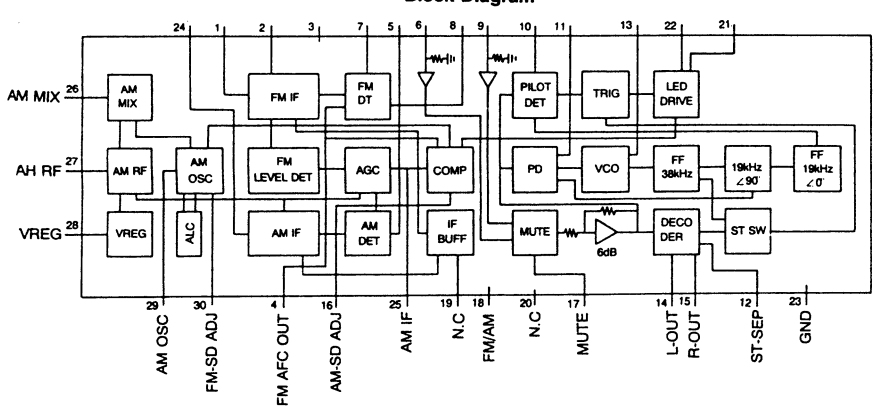


LA1851NM: IC401

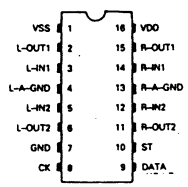
Top View

Block Diagram

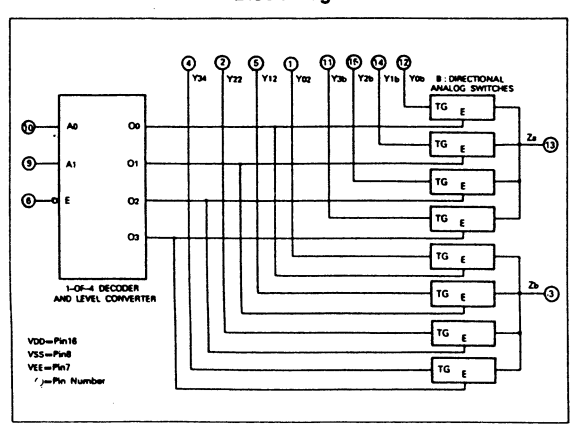


GD4051: IC504, IC505

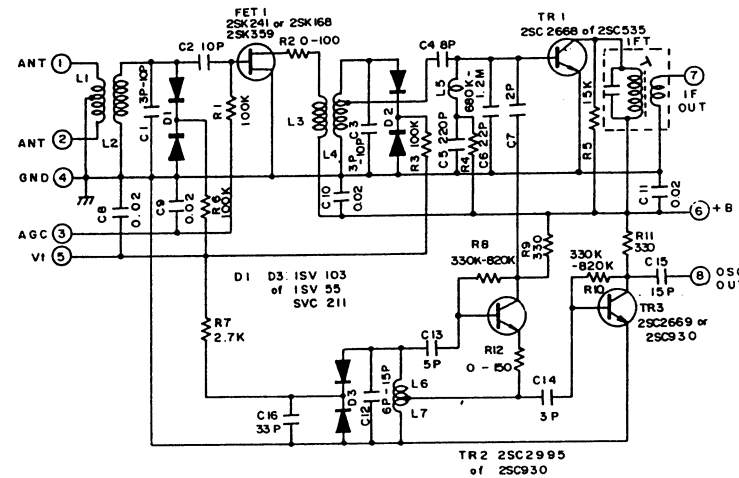
Top View



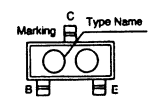
Block Diagram



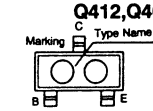
FE306-A15: FM FRONT-END



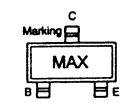
KRC111S: Q403,Q404,Q405



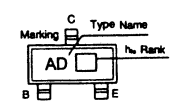
KRA107S: Q410,Q411, Q412,Q406



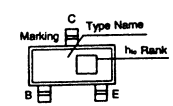
KTD1304: Q420,Q421



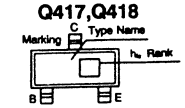
KTC3911: Q401,Q402,Q407



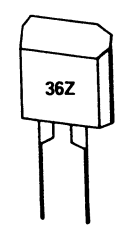
KTC3880: Q409



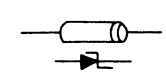
KTC3875: Q413,Q414,Q415,Q416, Q417,Q418



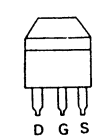
KV1236Z: VD401



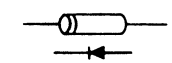
Zener Diode



2SK168: Q408

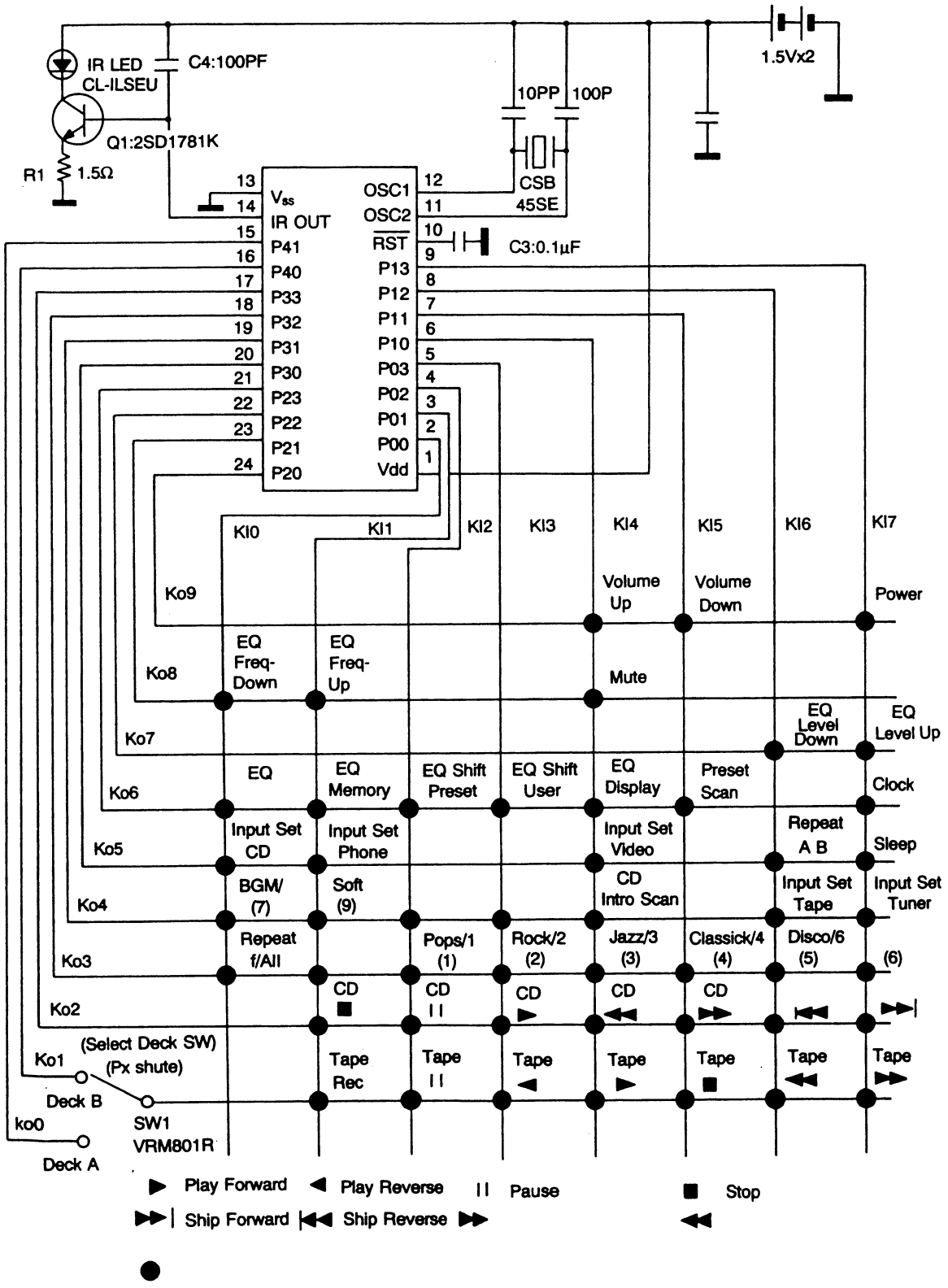


IN4148



SCHEMATIC DIAGRAMS

REMOTE CONTROL UNIT



TUNER AND FRONT SECTION

ITEM	A/DOM	C.D.E.F
R402. 403	3K	2K
R419	39K	150K
R437	3. 3K	1K
R440	180	JUMPER
R441	560	
R425	12K	47K
R457		100K
R458		100K
C411. 412	0. 0082uF	0. 0056uF
C413	10/16	3. 3/50
C465		0. 022uF
C466		220P
CF402. 403	10. 7MA8	10. 7M53G
FE401	FE306-A15	FE407-G60 (D ONLY) FE407-A15

FE401 FE306-A15
FM_FRONT_END

ANT1 ANT2 AGC G VT VCC IFOUT OSC

CF402 SFE10. 7MA8
CF403 SFE10. 7MA8

FM ANT 75 OHMS
*LW
AM-LOOP-ANT

CNT16 CNT15
5V
HF
R499 33K
B' VERSION ONLY

VD401-C KV1235Z
VD401-B KV1236Z
VD401-A KV1401-A 1236Z

L406 AM-IFT
L407 AM-OSC
L408 AM-ANT
L409 AM-ANT
L410 AM-OSC
L401 LPF
L402 LPF
L403 20. 8mH
L404 FM-DET-B
L405 FM-DET-A

IC401 LA1851NM
IC402 LM70D1NM
IC403 KIA6259P
IC500 CXP82316
IC501 LM324
IC502 MC4558
IC503 KIA6259P
IC504 GD4051

X401 7. 2MHZ
X501 10MHz
X502 CSB456F

TUNER B'D

B' VERSION ONLY

CNT06 CNT12
R G L +B
MUTE MONO TUNED ST CE CLK DATA

Signal Line

CNT03
PROTECTION -30V 45. 6V GND GND DIGI MUTE AC 50/60Hz ST-BY AC 4. 5V AC 4. 5V

FRONT B'D

TIMER PLAY TIMER REC MEMORY PRESET
FM AM MW LW PM MHZ KHZ

CNT13
X-BASS SUR DOWN UP G +15 -15

CNT12
MUTE CE CLK DATA MONO TUNED STEREO

CNT05
CE CLK DATA GND B GND -15V +15V

CHECK SLEEP CLOCK BAND

POWER ROCK PRE SUR PRESET UP VIDEO
POP X-BASS PRESET DOWN TAPE
TUNE MODE CLASSIC PHONO MEMO /SET CD
TIMER JAZZ MOVIE FM MODE TUNER

BAND SELECT

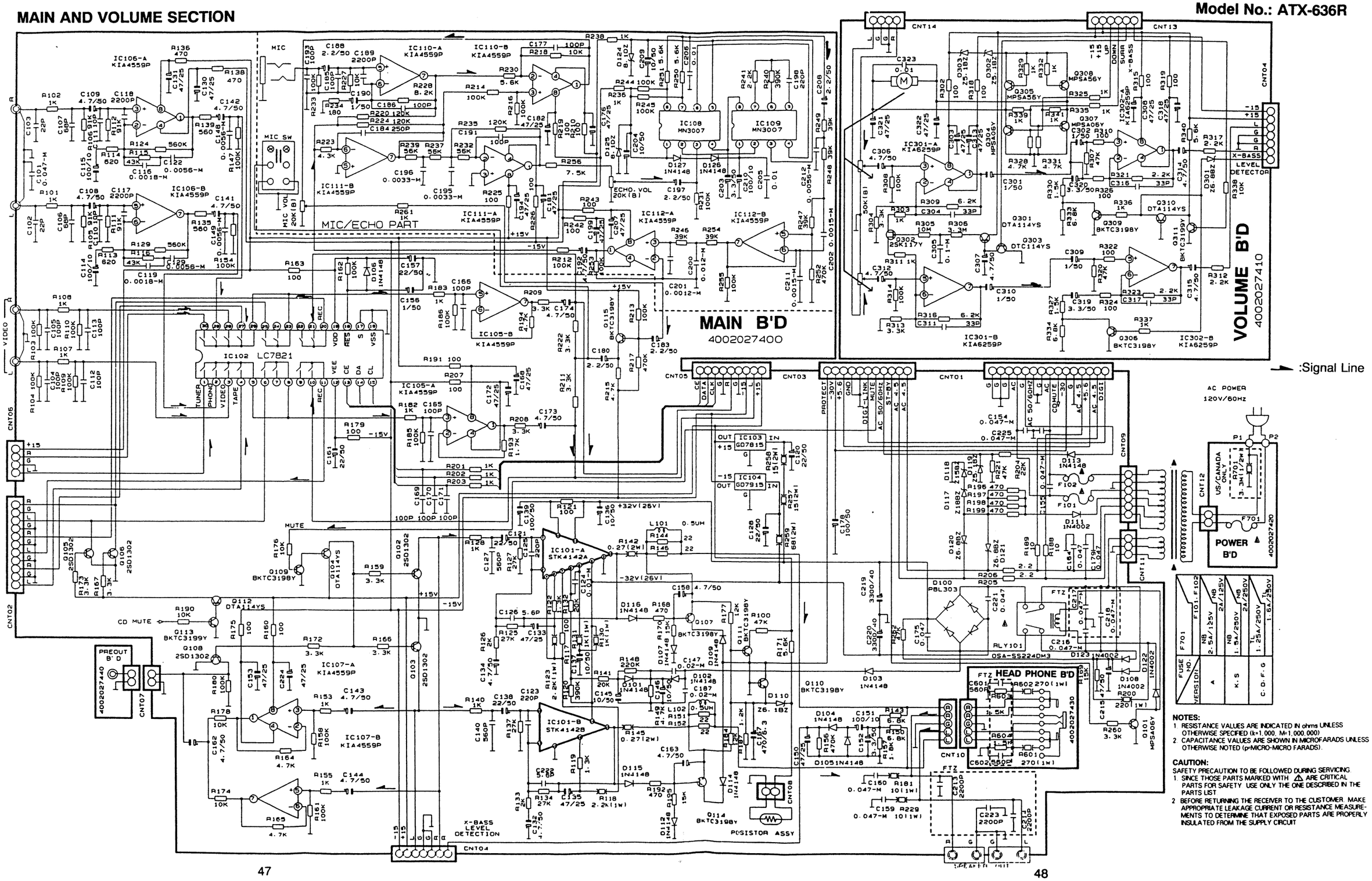
RMC SENSOR S501

NOTES:
1. RESISTANCE VALUES ARE INDICATED IN ohms UNLESS OTHERWISE SPECIFIED (k=1,000, M=1,000,000)
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED (p=MICRO-MICRO FARADS).

CAUTION:
SAFETY PRECAUTION TO BE FOLLOWED DURING SERVICING.
1. SINCE THOSE PARTS MARKED WITH ⚠ ARE CRITICAL PARTS FOR SAFETY. USE ONLY THE ONE DESCRIBED IN THE PARTS LIST
2. BEFORE RETURNING THE RECEIVER TO THE CUSTOMER, MAKE APPROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

MAIN AND VOLUME SECTION

Model No.: ATX-636R



FUSE NO.	F701	F101, F102
VERSION	A	K, S	C, D, F, G
T1	1.6A/250V	2A/125V	2A/250V	1.25A/250V
NB		2.5A/125V	1.5A/250V	1.25A/250V

NOTES:

1. RESISTANCE VALUES ARE INDICATED IN ohms UNLESS OTHERWISE SPECIFIED (k=1,000, M=1,000,000)
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED (p=MICRO-MICRO FARADS).

CAUTION:

SAFETY PRECAUTION TO BE FOLLOWED DURING SERVICING.

1. SINCE THOSE PARTS MARKED WITH ⚠ ARE CRITICAL PARTS FOR SAFETY USE ONLY THE ONE DESCRIBED IN THE PARTS LIST
2. BEFORE RETURNING THE RECEIVER TO THE CUSTOMER MAKE APPROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT

CCD-636R
SPECIFICATIONS

CD PART

General

Transmission bit rate	4.3218 Mbit/sec
Transmission on clock	16.9344 MHz
Error correction	CIRC C1, C2 doulbe correction

Pickup

System	Object lens drive type optical pickup
Object lens dirve system	2 Dimensional parallel drive type
Optical source	Semiconductor laser
Wave length	780 nm
Tracking system	3 beam tracking servo type

Others

Digital filter	8 time oversampling type
Analog filter	Analog 2 pole RC type
D/A converter	$\sum$ DECO Type

Electrical

Test Item		Unit	Norminal	Limit
Output Voltage at 1 kHz		V	1.6	1.6
Distortion and Noise without Filter:				
	20 Hz	%	0.6	0.7
	1 kHz	%	0.07	0.1
	10 kHz	%	0.3	0.4
	16 kHz	%	0.32	0.4
	18 kHz	%	0.42	0.5
	20 kHz	%	0.45	0.5
Distortion and Noise with Filter 30 kHz:				
	1 kHz	%	0.08	0.1
	20 kHz	%	0.12	0.15
S/N Ratio without Filter		dB	68	65
S/N Ratio with Filter 30 kHz		dB	75	70
Dynamic Range at 1 kHz		dB	93	90
Frequency Response (0 dB at 1 kHz):				
	20 Hz	dB	3	4
	100 Hz	dB	1	1.5
	10 kHz	dB	1	1.5
	20 kHz	dB	1	1.5
De-Emphasis:				
	1 kHz	dB	0.5	0.5
	5 kHz	dB	0.5	1
	16 kHz	dB	0.5	1.5
Channel Separation		dB	65	68
Channel Balance		dB	1	3

* Check Point: ATX636 Speaker output (Voltage: Video 0 dB Input, Output 2 V Point)

Environmetal

Test to specification
Temperature between 59°F (15℃) and 95°F (35℃) and relative humidity between 45% and 75%, with power supply voltage of 10% the normal supply voltage.
Test Disc: SONY YEDS-7 Type-3 or A.BEX TCD-781

Operation
Unit must work properly and correctly at the temparature range from 32°F (0℃) to 113°F (45℃) and the relative humidity form 40% to 80%, and with the supply voltage.

Storage
Teperature test: 48 hours each at -40°F (-40℃) and 149°F (65℃)
Humidity test: 40℃ 95% relative humidity.

DECK PART

Type	Stereo double full-logic auto-reverse cassette deck with dolby B/C NR system
Track system	4 track, 2 channel stereo playback (Deck A) and Recording/Playback (Deck B)
Recording system	AC bias (bias frequency: 105 kHz)
Erasing system	AC
Tape speed	1-7/8 inch/sec (4.76 cm/sec)
Heads	Magnetic recording/playback rotary (reverse head x1) Magnetic playback rotary (reverse head x1)
Motor	Electronic controlled DC motor
Wow and flutter	Less than 0.25% (WRMS)
Winding time (FF/REW)	Approximately 120 seconds with C-60 cassette tape
Frequency response	Normal tape 35-14.5 kHz (60-13.5 kHz ±3 dB) CrO_2 tape 35-16 kHz (60-14.5 kHz ±3 dB) Metal tape 35-16 kHz (60-15.5 kHz ±3 dB)
Signal to noise ratio (Weighted: CCIR/ARM)	Dolby NR off: 52 dB Dolby B: 62dB C: 72 dB
3rd hamonic distortion	Less than 3% at 333 Hz 0 dB, rec/playback
Input level	189 mV (Deck line input, 0dB)
Output level	500 mV (Deck line output, 0dB)
Built in features	Dolby B/C NR system Relay playback High/normal speed dubbing Auto tape selector (both deck A, deck B) Auto level control Auto music search Reverse mode selector CD synchronous dubbing

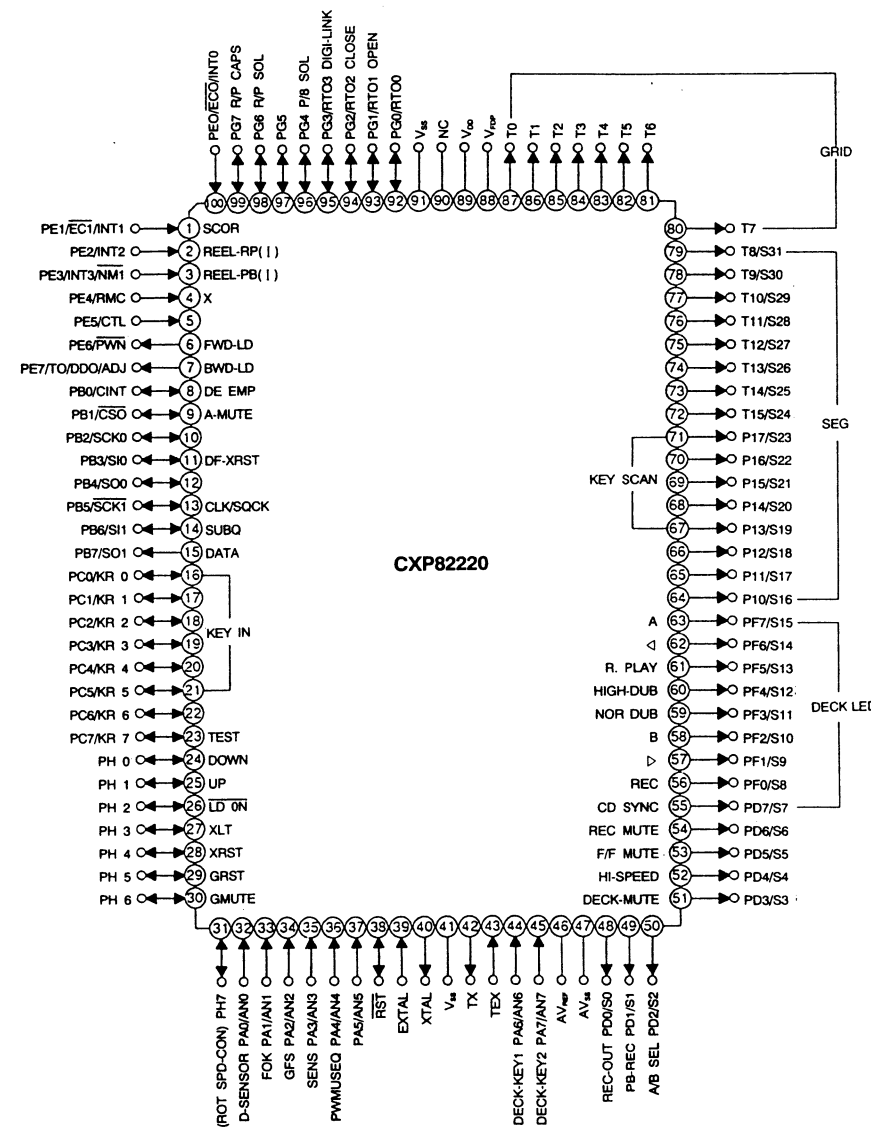
Dimensions (HxWxD) ..... 270 x 203 x 280 mm
Weight ..... 3 Kg (1.4 lb)

Notes:
1. Norminal specs represent the design specs. All unit should be able to approximate these-some will exceed and some may drop slight below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable: in no case should a unit fail to meet limit specs.
2. This manual is based on the American (A) stanndard, and provides information on regional circuit modification through the use of alternate schematic diagrams or wiring diagrams, and information on regional component variations through the use of parts lists. Design and specifications subject to change without notice.

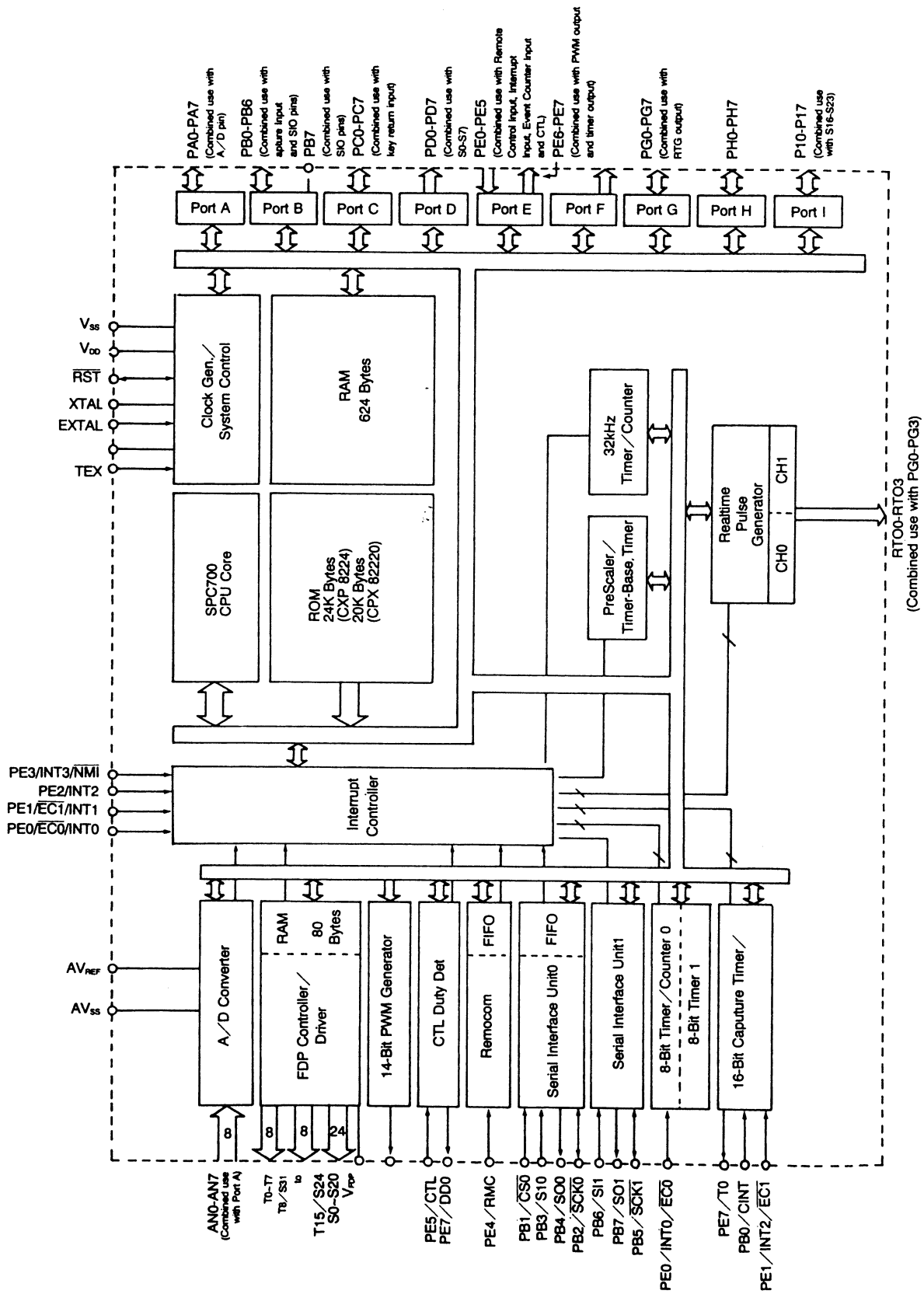
CIRCUIT DESCRIPTION

CPU (IC500): CXP82220 (8 bit SINGLE-CHIP MICROCOMPUTER)

1. Pin Connection Diagram



2. Block Diagram



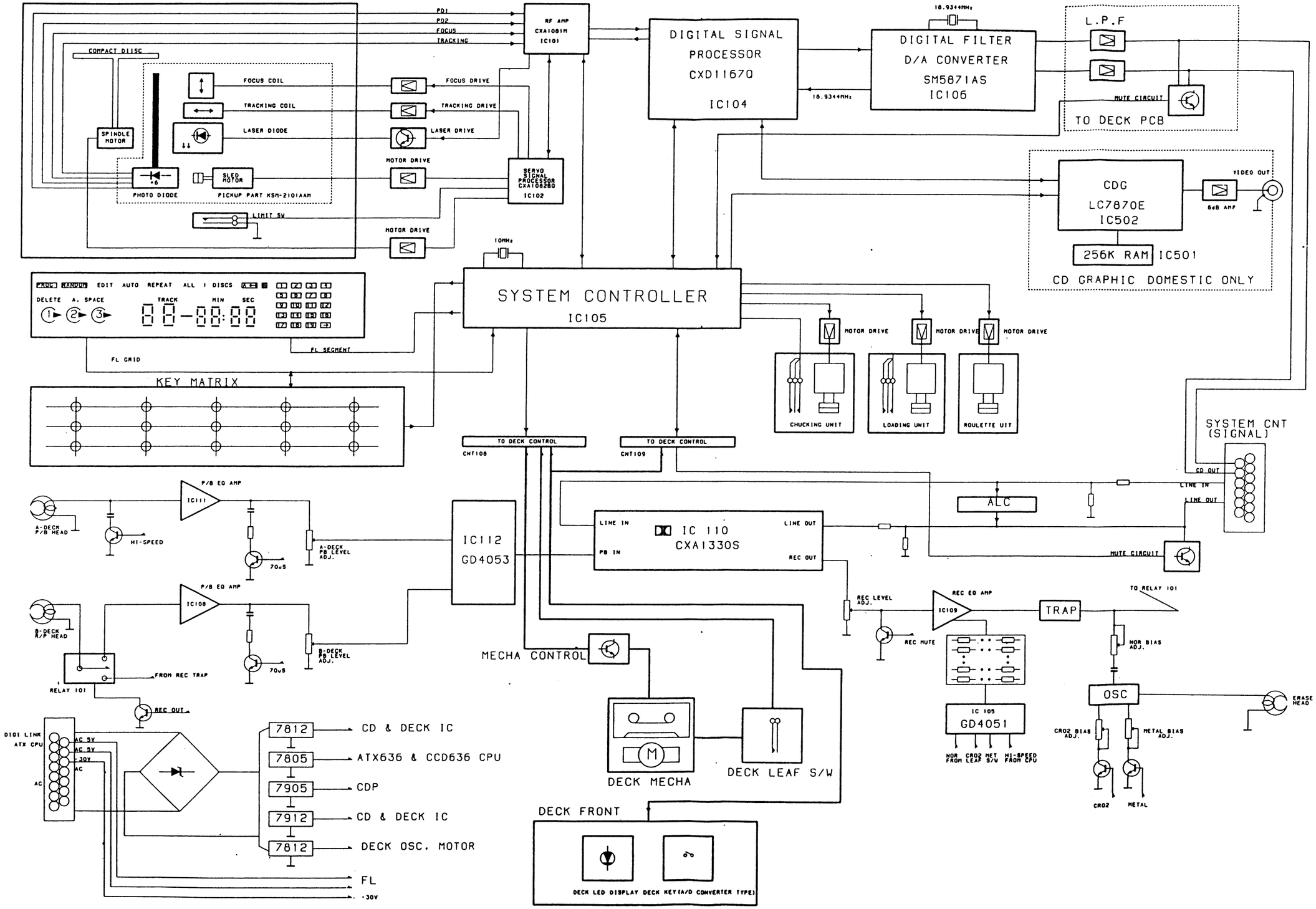
3. Pin Functions

Symbol	Input / Output	Functions		
PA0/AN0 to PA7/AN7	I/O/Analog input	(Port A) 8-bit I/O port. Each bit can be individually specified as input or output. (8 pins)	A/D converter analog input pins.	
PB0/CINT	I/O/Input	(Port B) 8-bit I/O port. The low 7 bits can be individually specified as input or output. The most significant bit (PB7) is output only. (8 pins)	16-bit timer/counter external capture input pin.	
PB1/CSO	I/O/Input		Serial interface (CH0) chip select input pin.	
PB2/SCK0	I/O/I/O		Serial clock (CH0) I/O pin.	
PB3/S10	I/O/Input		Serial data (CH0) input pin.	
PB4/SO0	I/O/Output		Serial data (CH0) output pin.	
PB5/SCK1	I/O/I/O		Serial clock (CH1) I/O pin.	
PB6/SI1	I/O/Input		Serial data (CH1) input pin.	
PB7/SO1	Output/Output		Serial data (CH1) output pin.	
PC0/KR0 to PC7/KR7	I/O/Input	(Port C) 8-bit I/O port. Each bit can be individually specified as input or output. Each can drive a 12 mA sink current. (8 pins)	Key return input pins for performing key scans with the FDP segment signals.	
PD0/S0 to PD7/S7	Output/Output	(Port D) 8-bit output port. (8 pins)	FDP segment signal output pins.	
PE0/INT0/EC0	Input/Input/Input	(Port E) 8-bit input/output port. The low 6 bits are inputs, and the high 2 bits are outputs. (8 pins)	External interrupt request input pins. (4 pins)	Timer/counter external event input pins. (2 pins)
PE1/INT1/EC1	Input/Input/Input			
PE2/INT2	Input/Input			
PE3/INT3/NMI	Input/Input/INput			Non-maskable interrupt request input pin.
PE4/RMC	Input/Input		Remote control unit receive circuit input pin.	
PE5/CTL	Input/Input		14-bit PWM output pin.	
PE6/PWM	Output/Output		16-bit timer/counter square wave output pin. CTL duty detection output pin, and pin for frequency division output of 32 kHz oscillator.	
PE7/TO/DDO/ADJ	Output/Output Output/Output			
PF0/S8 to PF7/S15	Output/Output	(Port F) 8-bit output port. (8 pins)	FDP segment signal output pins.	

Symbol	Input / Output	Functions	
PG0/PTO0 to PG3/RTO3	I/O/Output	(Port G) 8-bit I/O port. Each bit can be individually specified as input or output. The lower four bits are output logically ORed with the RTO contents. (8 pins)	Realtime pulse generator (RTG) outputs. These function as high-precision realtime pulse output ports. (4 pins)
PG4 to PG7	I/O		
PH0 to PH7	I/O	(Port H) 8-bit I/O port. Each bit cna be individually specified as input or output. (8 pins)	
PI0/S16 to PI7/S23	Output/Output	(Port 1) 8-bit output port. (8 pins)	FDP segment signal output pins.
T8/S31 to T15/S24	Output/Output	Dual-use output pins for FDP timing signals adn FDP segment signals.	
T0 to T7	Output	FDP timing signal output pins	
V_{FDP}		FDP voltage supply pin if an internal resistor was specified with a mask option.	
EXTAL	Input	Crystal interface pins for system clock oscillation. If the clock is supplied externally then it should be input to the EXTAL pin. The XTAL pin should then be left open.	
XTAL	Output		
TEX	Input	Crystal interface pins for the 32-kHz timer/counter's oscillatrl. A 32-kHz liquid crystal oscillatro is placed between TEX and TX. When used as an event input, connect the signal source to TEX, and leave TX open.	
TX	Output		
RST	I/O	System reset pin, active when "L"	
NC		This pin should be connected to V_{DD} during operation.	
AV_{REF}	Input	A/D converter reference voltage input pin.	
AVSS		A/D converter ground pin.	
V_{DD}		Positive power supply pin.	
V_{SS}		GND pin	

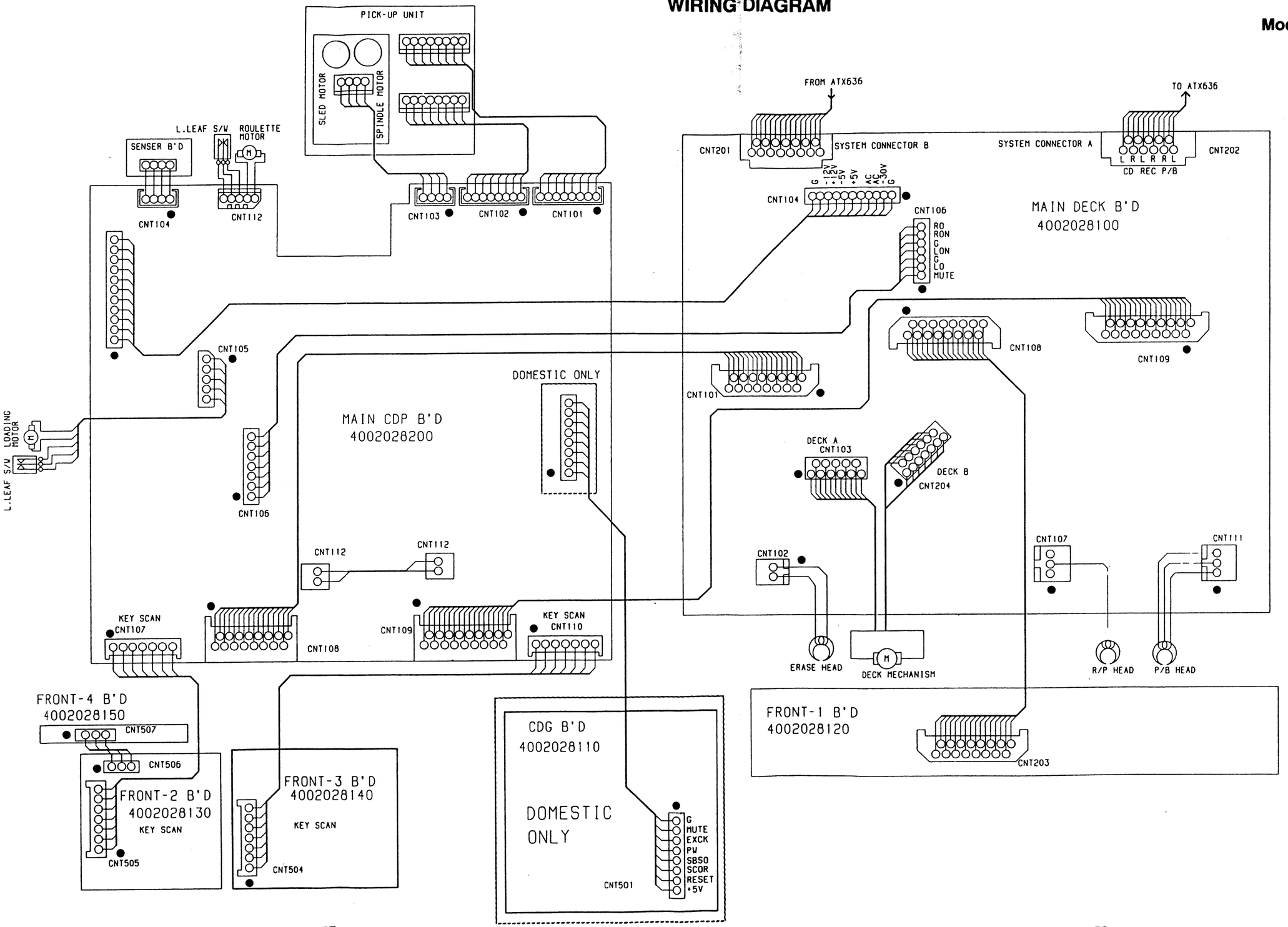
BLOCK DIAGRAM

Model No.: CCD-636R



WIRING DIAGRAM

Model No.: CCD-636R



HANDLING LASER PICKUP

The laser diode in the optical system of this player can be damaged by electrostatic discharge from your clothes or your body. Proper electrostatic grounding for service personal is required during servicing.

BEFORE REPAIRING THE COMPACT DISC PLAYER

Preparation

- Human Body Grounding:
  Many of the components used in this compact disc player, including the laser pickup, are sensitive to electrostatic discharge. Service personal should be grounded with an electrostatic armband (1 Mohm).

- Caution:
  Static charge on clothing does not escape through a body grounding wrist band.
  Be careful not to contact the pickup or electrical components with your clothing.

- Workbench and Tool Grounding:
  A properly-grounded electroconductive plate (1 Mohm) or metal sheet should be fitted to the workbench surface. Tools and instruments (such as soldering irons and scopes) should be grounded to prevent AC leakage.

Incorrect

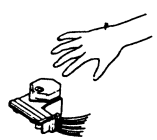


Figure 1

Correct

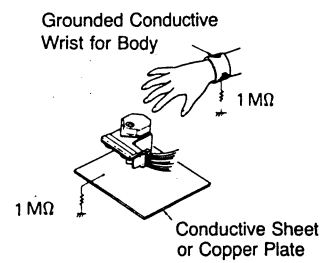


Figure 2

Note: Laser diodes are so suceptible to damage from static electricity that, even if a static discharge does not ruin a diode, it can shorten its life or cause it to work improperly.

PICKUP REPLACEMENT

Caution:
Laser diodes are extremely suceptable to damage from staatic electricity. Even if a static discharge does not ruin the diode, it can shorten its life or cause it to work improperly. When replacing the pickup take approprate measures, such as using a conductive mat and a grounded soldering iron to protect the laser diode from static damage.

1. Remove the CD mechanism assembly by refering to the disassembly instructions (Figure 3).

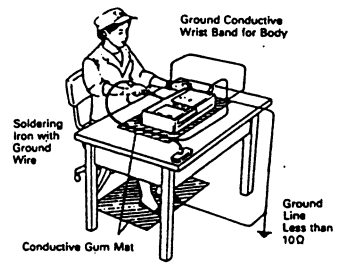


Figure 3

2. 1) Remove the two screws ①, ②
   and then remove the bracket pickup.
   2) Remove the two screws ③, ④ (Figure 4).

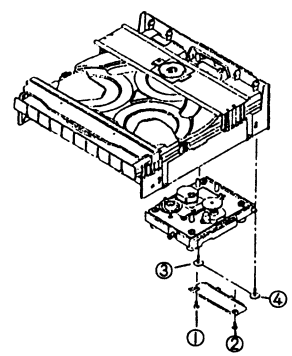


Figure 4

3. Remove the Gear A (Figure 5).
4. Pull out the Slide Shaft.

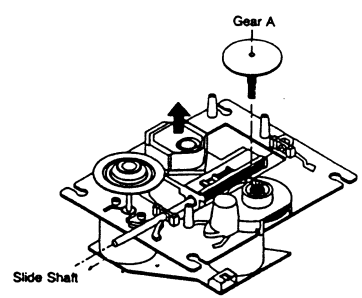


Figure 5

5. Remove the pickup (See Figure 6).

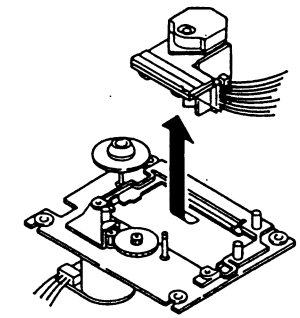


Figure 6

6. After you connect the wire connector, desolder and remove the shorting tab (See Figure 7).

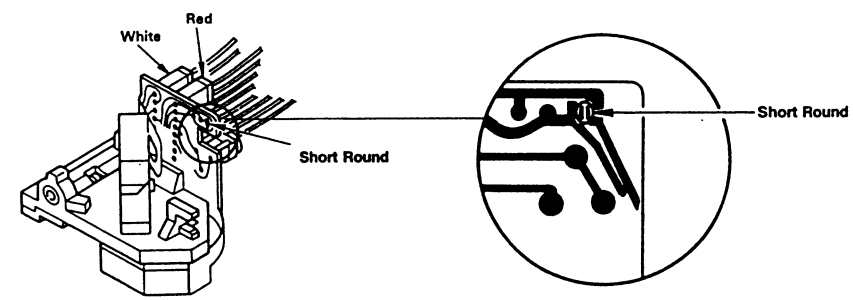


Figure 7

7. Refer to the exploded view of the compact disc mechanism on page 35 for detailed illustmations.

OPERATION CHECK

When the power switch is terned on after the chucking arm is removed, observe the objective lens and chuck the following. (The optical system block should be at the lead-in position when it is checked.)

- The disc table should be at the innermost position after the chucking arm is removed.
- The diffused light of the laser beam can be seen when the power switch is turned on.
- Verical (up down) movement of the objective lens take place 2 or 3 times.

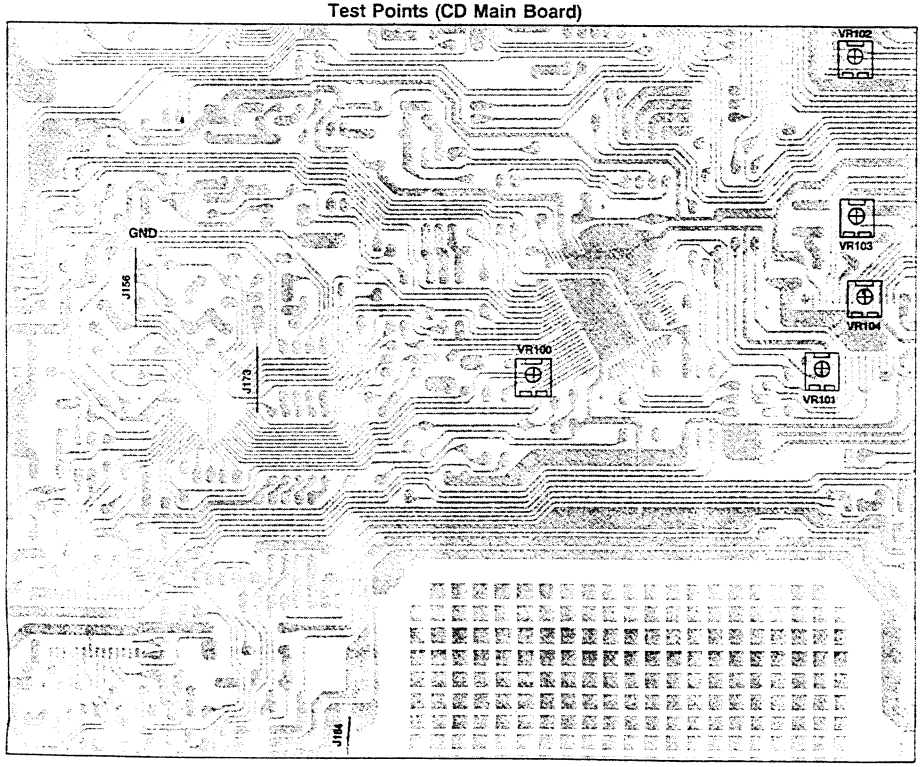
ALIGNMENT PROCEDURES(CD PART)

Equipment Required
- Oscilloscope(over 50MHz)
- Frequency Counter
- Test Disc PHILIPS 5A
- A Regular Compact Disc

Before Adjustments
- Make the adjustment with a numeric order.
- Use the dualtrace oscilloscope with high impedance(more than 10M ohm)
- How to enter into the TEST MODE
  1) Open the disc tray
  2) Power off.
  3) Power on with ressin "SW101(TEST MODE)."
  4) "0" or all segments appears in the display and it means the TEST MODE 0.
  5) If you press the PLAY button, the TEST MODE changes to the TEST MODE 1.
  6) If you press the PLAY button again, the TEST MODE changes to the TEST MODE 2.
- Tentative steetin of Volume
- Set the semi-fixed resistance tentatively as follows;

VR102 (EF. Balance)	Center Position
VR103 (F. Bias)	Center Position
VR104 (T. Gain)	Turn to the first counterclockwise
VR101 (F. Gain)	Turn to the end counterclockwise
VR100 (PLL)	Center Position

Test Points (CD Main Board)



Step	Connect	Setting	Adjust	Remarks
	PLL(Phase Locked Loop) Adjustment			
1	See Figure 10	In the test mode 0	**VR100**	Counter reading to be 4.3 MHz.
2	Disconnect between J156 (GND) and R138(ASY)			
3	Check the counter reading to be 4.3218 ±0.0025 MHz in the test mode 2.			
	EF. Balance Adjustment			
1	See Figure 11	In the test mode 1		6
2		Turn a disc softly with a finger and adjust VR105 to obtain symmetrical waveform	**VR102**	0V, A, B, A=B VOLT/DIV: 1V TIME/DIV: 1ms Obtain symmetrical waveform.
3	The abve adjustments must be made very carefully as the misadjustment may cause skipping.			

PLL Adjustment

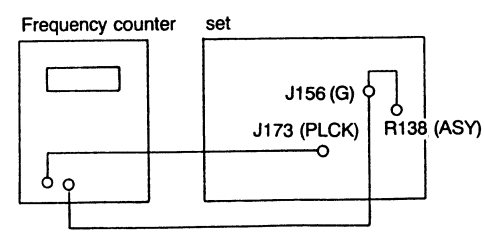


Figure 10

EF. Balance Adjustment

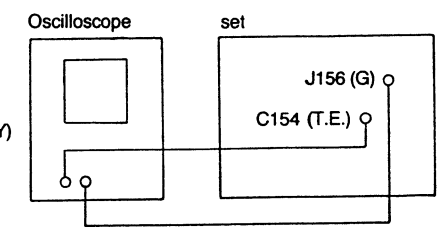
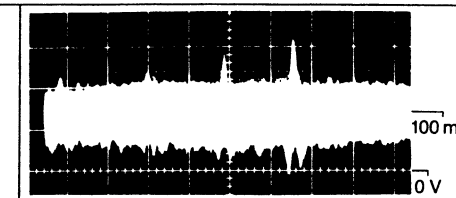
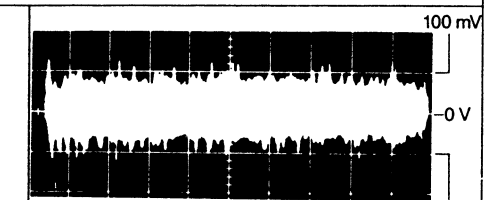


Figure 11

Step	Connect	Setting	Adjust	Remarks
	Focus Gain Adjustment			
1	See Figure 12	In the test mode 2	**VR101**	 **Focus error signal of about 100mV.**
2	To increase the focus gain, trun VR102 clockwise.			
	Tracking Gain Adjustment			
1	See Figure 13	In the test mode 2	**VR104**	 Obtain the tracking drive signal of about 1 Volt.
2	Change the regular disc to PHILIPS test disc 5A and play where the black dot of 800µm is, set confirm no skipping.			
3	If there is any skipping, adjust VR103 to reduce the tracking servo gain till no skipping occurs. To reduce the gain, turn VR103 counterclockwise.			

Focus Gain Adjustment

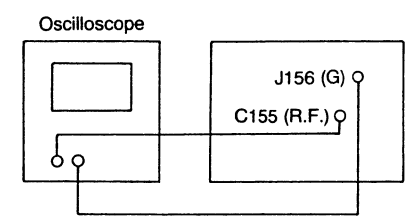


Figure 12

Tracking Gain Adjustment

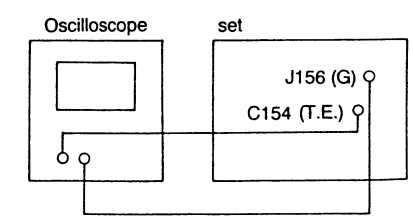
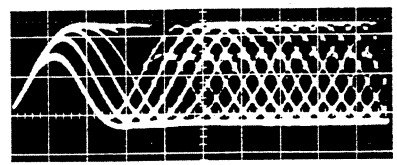


Figure 13

Step	Connect	Setting	Adjust	Remarks
Focus Bias Adjustment				
1	See Figure 14	In the test mode 2	VR103	Obtain the maximum amplitude and the biggest diamond windows of the eye pattern.  The above is on example of good eye pattern. The diamond windows in the center portion are large and clear.

Focus Bias Adjustment

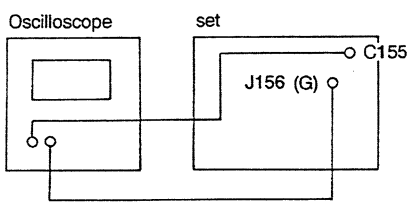


Figure 14

ALIGNMENT PROCEDURES

Before Measurements and Adjustment

The following general conditions apply to the electrical measurements and adjustments unless especially stated otherwise.
— Dolby NR switch off.

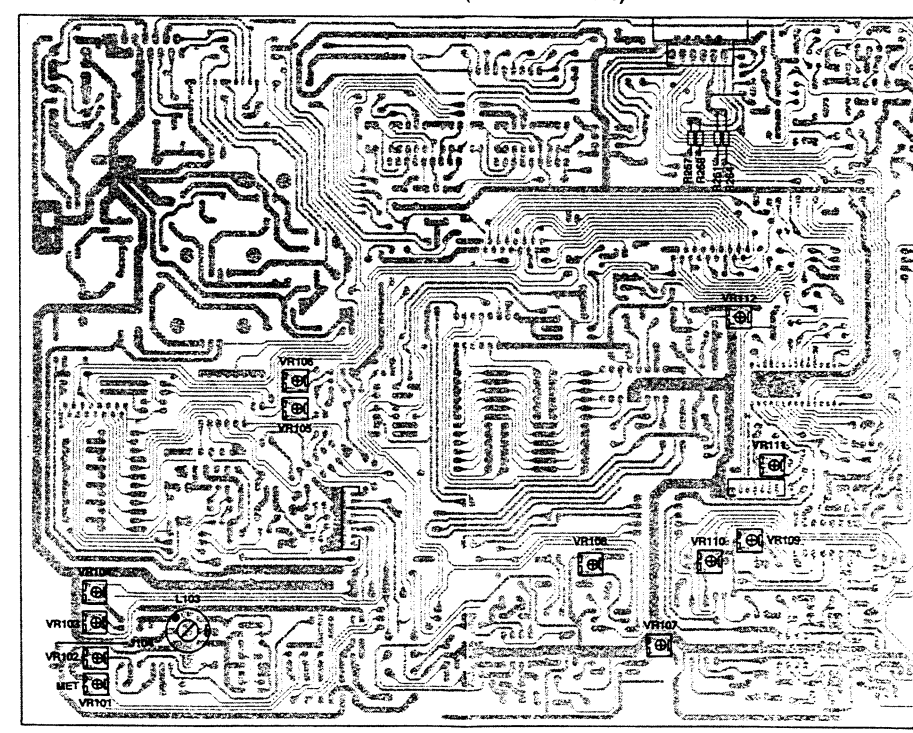
1. Test tape

- TCC-155 Azimuth (14 kHz, -24 dB)
- TCC-122 Tape speed (3 kHz, -10 dB)
- TCC-130 Playback level(Dolby ref. tape 400 Hz, 0 dB)
- TCC-185C Playback frequency response

— Reference Tape
- Normal TDK AC-224
- CrO_2 TDK AC-513
- Metal TDK AC-712

2. Instrument required
— Audio frequency oscillator
— ACVM or dual channel, mV-meter
— Wow/Flutter meter
— Oscilloscope

Test Points (Deck Main Board)



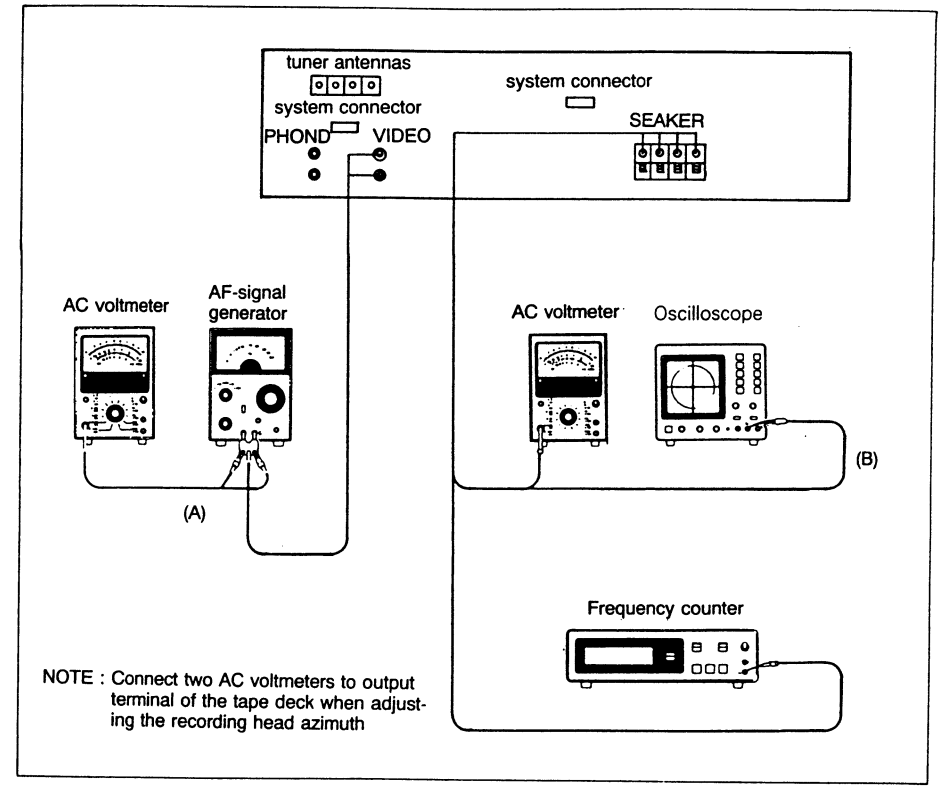
3. Playback section

Adjustments	Test tape	Mode	Apply Signal to	Measure on	Read on	Adjust with	Adjust to
Head Azimuth	TCC-155 14 kHz (A.BEX)	FWD Play (A & B Deck)		R257(L) R261(R)	AC mV-meter Oscilloscope	Adjusting a left screw of head	Max • Lissajous' figure become a straight line with an angle 45 degrees
		REW play (A & B Deck)				Adjusting a right screw of head	
Playback Speed at normal	TCC-112 3 kHz -10 dB(A.Bex)	Play (A & B Deck)			Wow and Flutter Meter	VR105	3000 Hz ± 15 Hz
Playback at high-speed	TCC-112 3 kHz -10 dB(A.Bex)					VR106	4500 Hz ± 30 Hz
Playback Level	TCC-130 400 Hz 0 dB (A.Bex)				AC mV-meter	A Deck VR109, VR110	550 mV
						B Deck VR107, VR108	
Playback frequency responce	TCC-185C 12.5 kHz, 1 kHz, 60 Hz(A.Bex)				AC mV-meter		See graph Fig.1 freq. response

4. Recording section

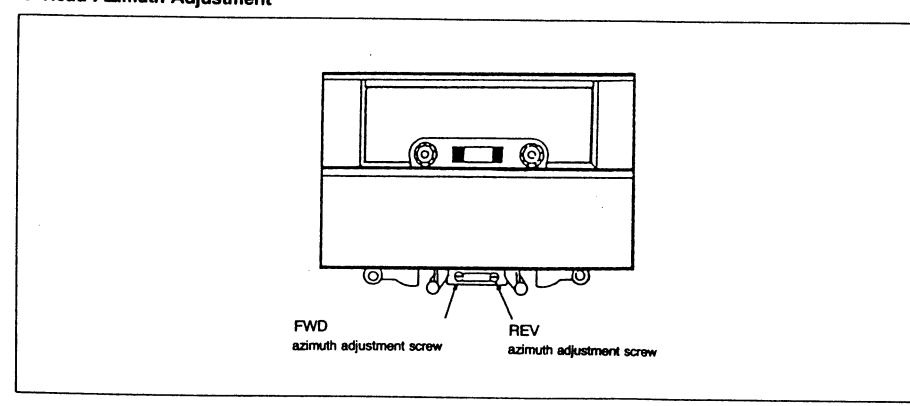
Adjustments	Test Tape	Mode	Apply Signal to	Measure on	Read on	Adjust with	Adjust to
Bias OSC Frequency	AC-712 (TDK)	Rec/Pause	400 Hz, 400 mV Video	J104	Frequency Counter	L103	105 kHz ± 400 Hz
Target value Bias	Metal AC-712	Rec/Pause		CNT105 TRAP L TRAP R	AC mV-meter	VR104, VR103	AC 16V
	CrO_2, AC-513					VR102	AC 12
	Normal, AC-224					VR101	AC 8
Recording Level	AC-712 (TDK)	Rec/Pause		CNT110 LO, RO	〃	VR110, VR111	AC 8 mV

5. Test Equipment Connection



NOTE : Connect two AC voltmeters to output terminal of the tape deck when adjusting the recording head azimuth

6. Head Azimuth Adjustment



Notes:

*a. Prior to any measurement or adjustment, the tape running heads and tape guides should be degaussed and cleaned.

*b. The maximum permissible speed variation is ±0.5%. Moreover, the wow and flutter can be read. This value should not exceed 0.2%.

*c. The voltage on line out should read 500 mV ±20 mV. If this is not the case, use VR402 to reduce the LF signal (bias disabled by as many decibels, as the reading was too low or too high).

*d. When one channel is adjusted, this may slightly affect the adjustment of the other channel. If the adjustment is correct, the frequency response curve will be similar to curve b in Figure 1, with distortion below 3% (−3 dB rec/play).

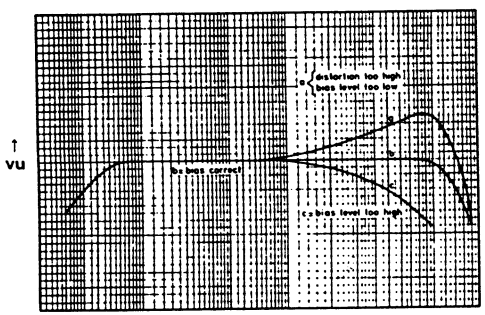


Fig. 1

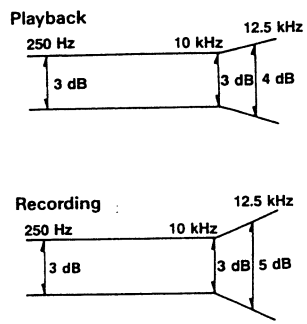
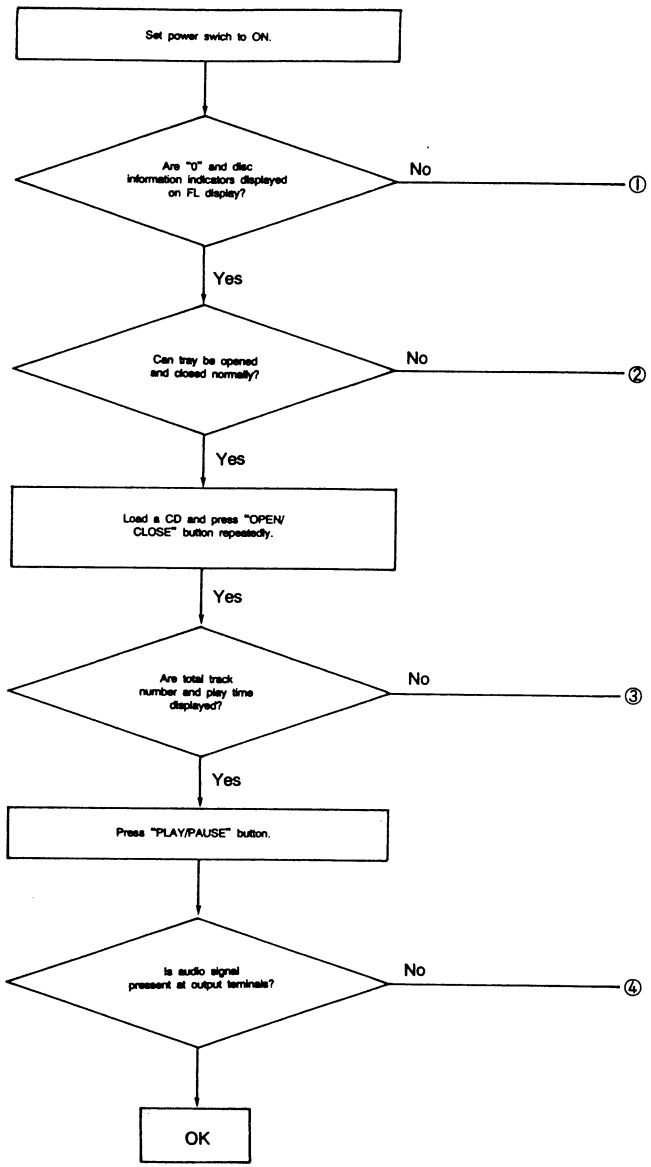


Fig. 2. Allowable Playback/Recording Frequency Response Zone

TROUBLESHOOTING



[**Repair Item 1**] At power on. "*0*" and some parts are not displayed.

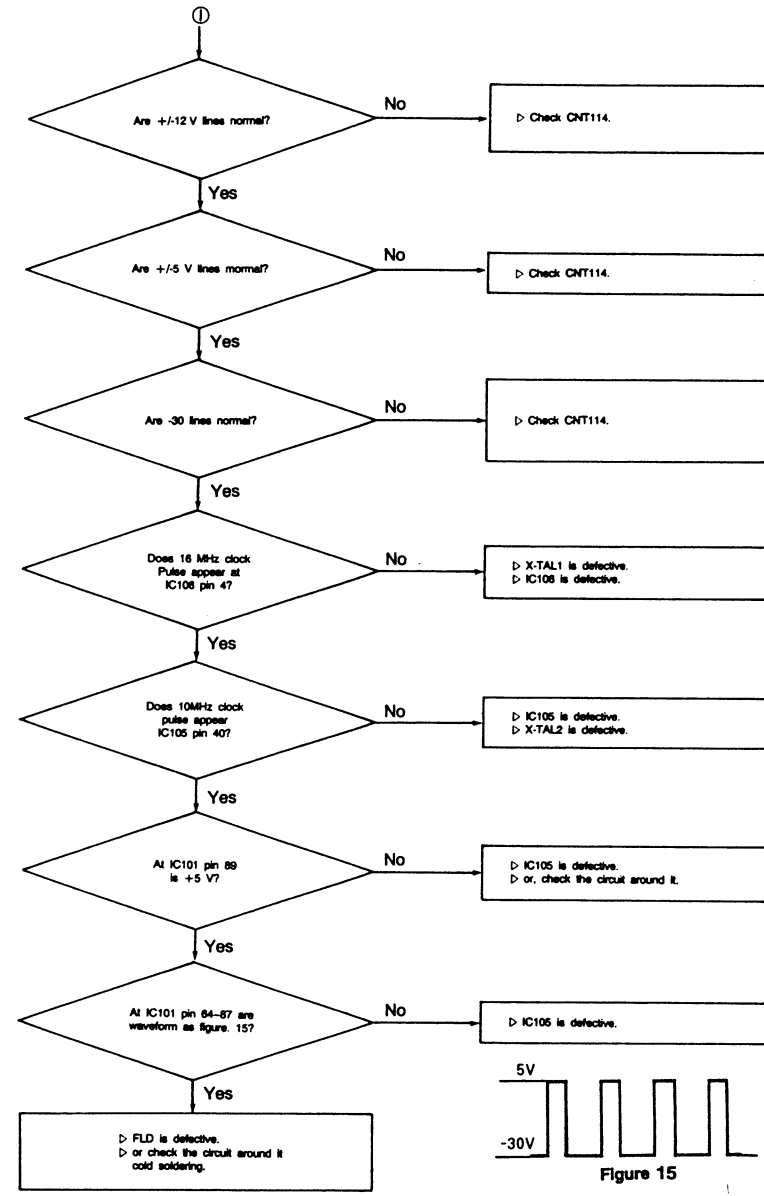
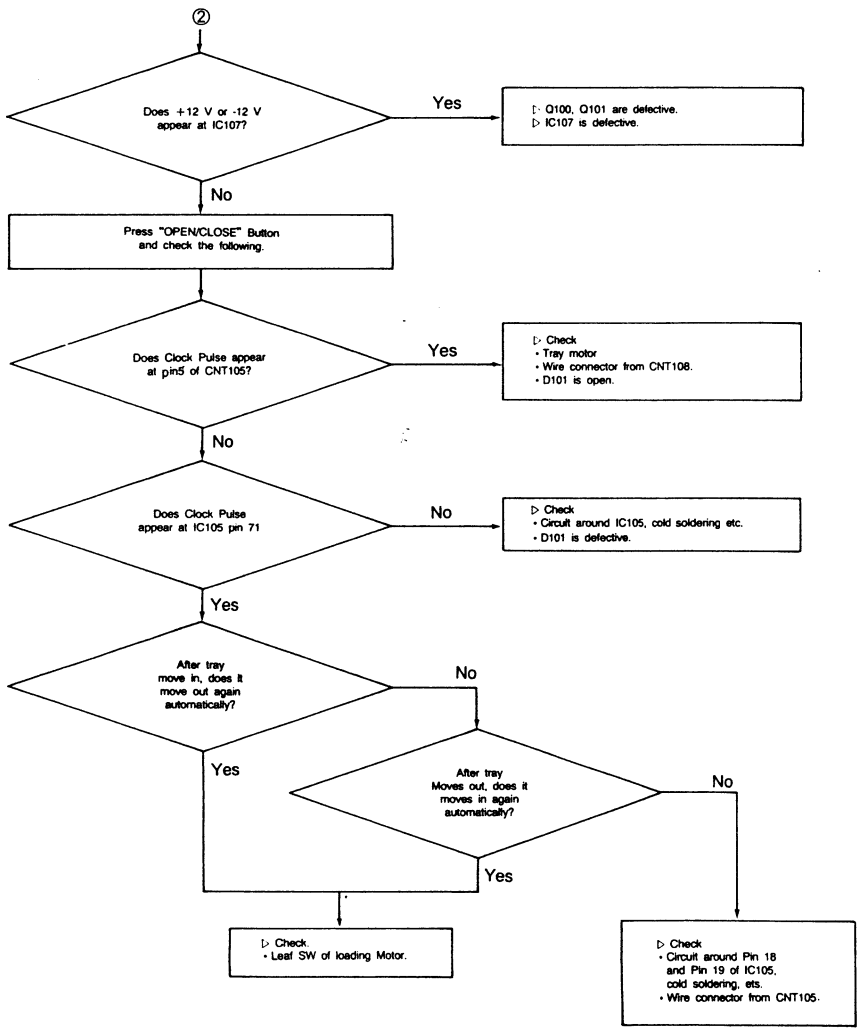
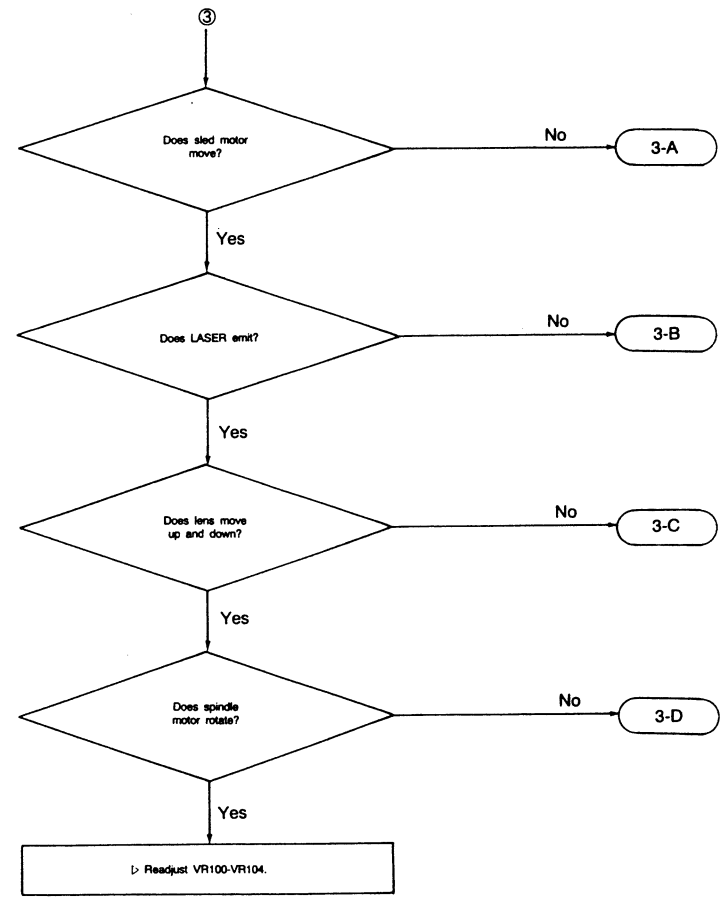


Figure 15

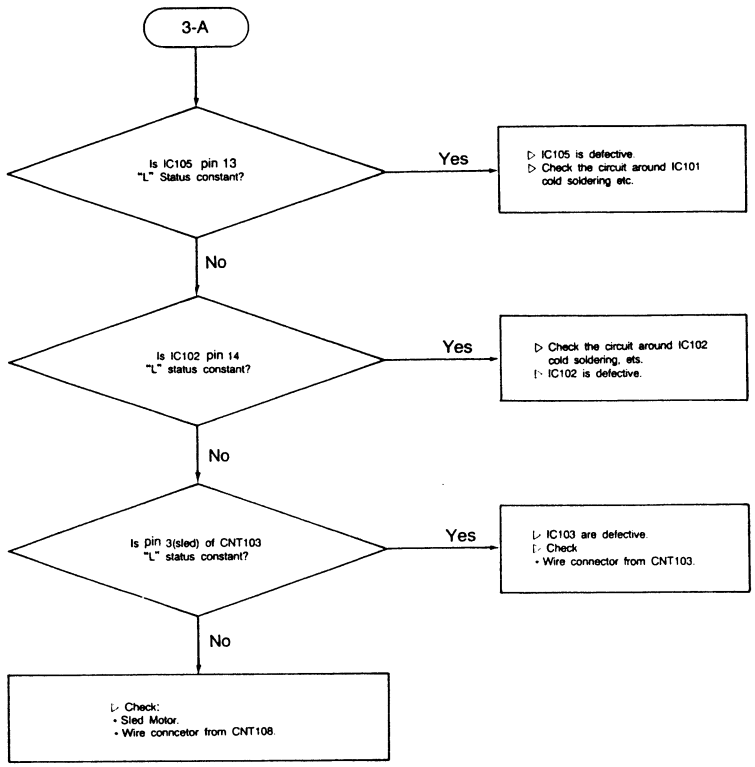
[**Repair Item 2**] Tray cannot be opened and closed by pressing "Open/Close" Button


②
Does +12 V or -12 V appear at IC107?
Yes
▷ Q100, Q101 are defective.
▷ IC107 is defective.
No
Press "OPEN/CLOSE" Button and check the following.
Does Clock Pulse appear at pin5 of CNT105?
Yes
▷ Check
• Tray motor
• Wire connector from CNT108.
• D101 is open.
No
Does Clock Pulse appear at IC105 pin 71
No
▷ Check
• Circuit around IC105, cold soldering etc.
• D101 is defective.
Yes
After tray move in, does it move out again automatically?
No
Yes
After tray Moves out, does it moves in again automatically?
No
Yes
▷ Check
• Leaf SW of loading Motor.
▷ Check
• Circuit around Pin 18 and Pin 19 of IC105, cold soldering, ets.
• Wire connector from CNT105.

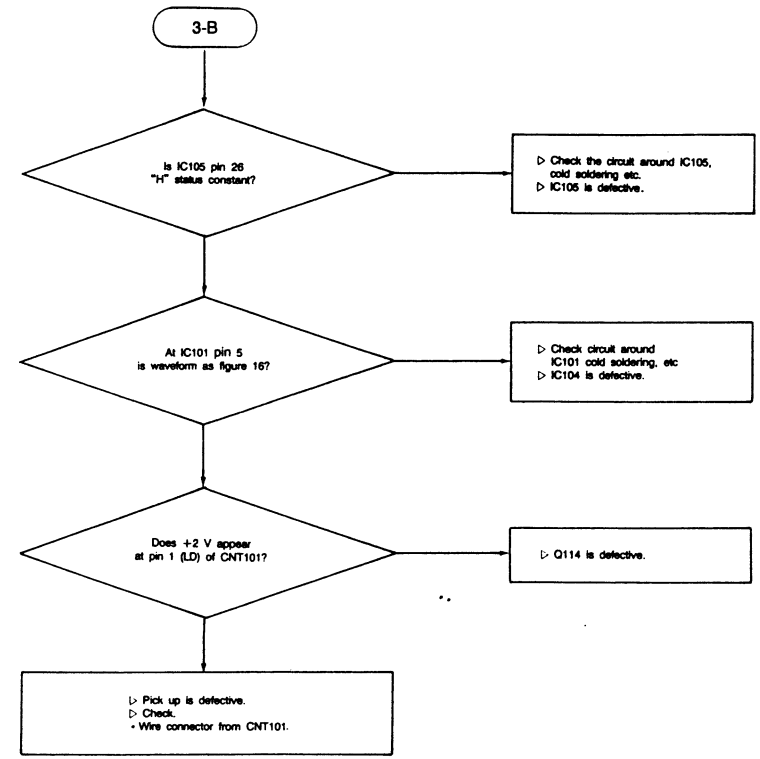
[**Repair Item 3**] "0" is displayed instead of total track number and play time.



[**Repair item 3-A**] Sled motor does not move.



[**Repair Item 3-B**] Laser does not emit.


3-B
Is IC105 pin 26 "H" status constant?
▷ Check the circuit around IC105, cold soldering etc.
▷ IC105 is defective.
At IC101 pin 5 is waveform as figure 16?
▷ Check circuit around IC101 cold soldering, etc
▷ IC104 is defective.
Does +2 V appear at pin 1 (LD) of CNT101?
▷ Q114 is defective.
▷ Pick up is defective.
▷ Check.
• Wire connector from CNT101.

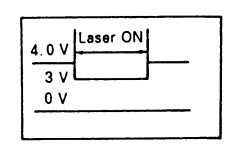


Figure 16

[**Repair Item 3-C**] Object lens of pickup unit does not move up and down.

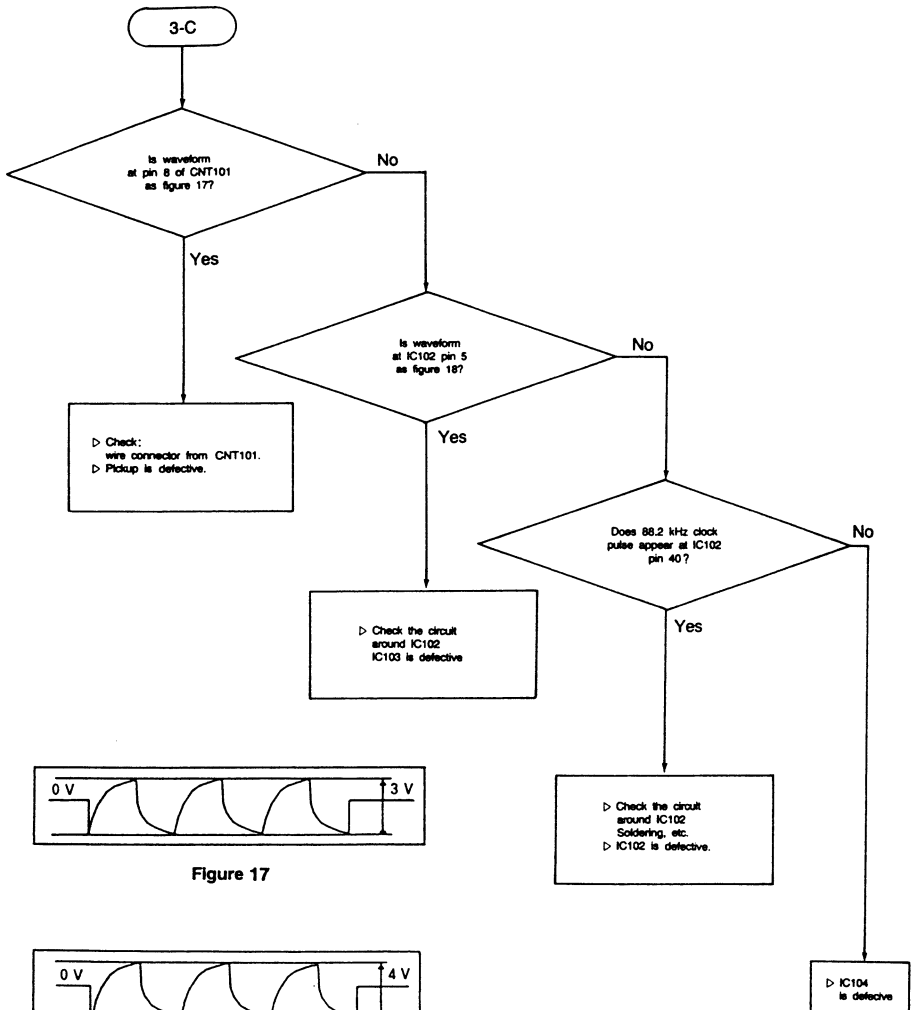

3-C
Is waveform at pin 6 of CNT101 as figure 17?
No
Yes
▷ Check:
wire connector from CNT101.
▷ Pickup is defective.
Is waveform at IC102 pin 5 as figure 18?
No
Yes
▷ Check the circuit around IC102 IC103 is defective
Does 88.2 kHz clock pulse appear at IC102 pin 40?
No
Yes
▷ Check the circuit around IC102 Soldering, etc.
▷ IC102 is defective.
▷ IC104 is defective

Figure 17

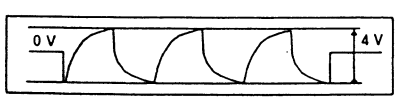
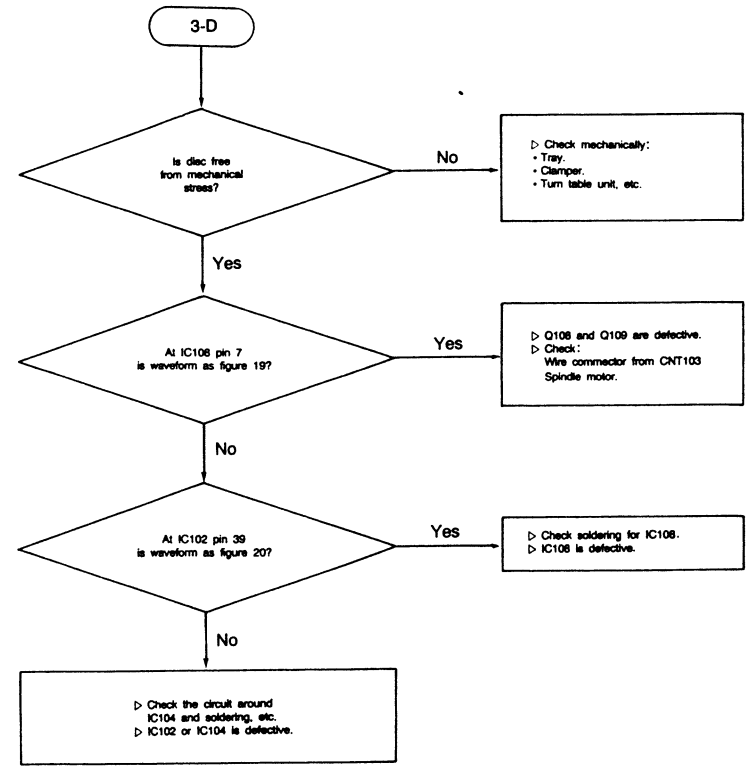


Figure 18

[**Repair Item 3-D**] Spindle motor does not rotate.



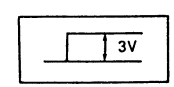


Figure 19

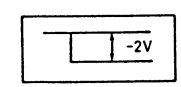
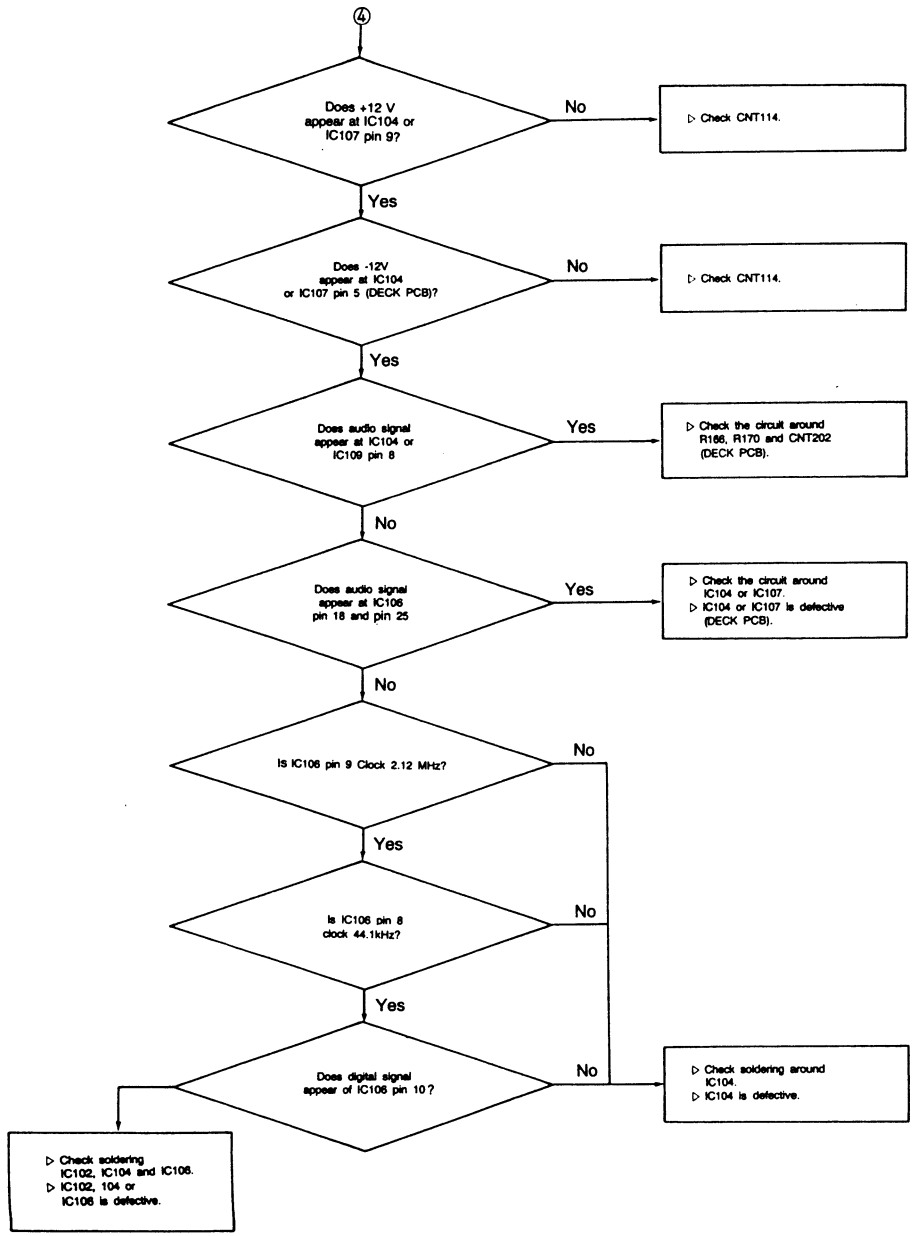


Figure 20

[**Repair Item 4**] No sound signal


④
Does +12 V appear at IC104 or IC107 pin 9?
No
▷ Check CNT114.
Yes
Does -12V appear at IC104 or IC107 pin 5 (DECK PCB)?
No
▷ Check CNT114.
Yes
Does audio signal appear at IC104 or IC109 pin 8
Yes
▷ Check the circuit around R166, R170 and CNT202 (DECK PCB).
No
Does audio signal appear at IC106 pin 18 and pin 25
Yes
▷ Check the circuit around IC104 or IC107.
▷ IC104 or IC107 is defective (DECK PCB).
No
Is IC106 pin 9 Clock 2.12 MHz?
No
Yes
Is IC106 pin 8 clock 44.1kHz?
No
Yes
Does digital signal appear of IC106 pin 10?
No
▷ Check soldering around IC104.
▷ IC104 is defective.
▷ Check soldering IC102, IC104 and IC106.
▷ IC102, 104 or IC106 is defective.

MECHANICAL PARTS LIST

CABINET & CHASSIS

Ref. No.	Part No.	Description	Q'ty	Version
PACKGE				
	04825132401	Box Out P636R	1	D,AVS,G,E
	9722036180	Cushion Poly	1	
	9715000120	Film Soft PE	1	
CABINET & CHASSIS				
1	046122028111	Cover Top	1	
2	6123016110	Cover Bottom	1	
3	6121612310	Chassis Main	1	
4	6715021230	Foot Cushion	4	
5	6528302210	Fastner	1	
6	6123015810	Frame Center	1	
7	048501031011	Panel Front	1	Dom
	048501031012	Panel Front	1	
8	048535036311	Badge	1	Dom
	048535040411	Badge	1	A,B,E,AVS,FI800
	048535042111	Badge	1	Packard bell
	048535040811	Badge	1	Migros
9	048545118621	Button Dubbing	1	
10	048545118622	Button CD Syncro	1	
11	048543054811	Button Deck 5Key	1	
12	8553018110	Indicator	1	
13	8553018120	Indicator	1	
14	8553018130	Indicator	2	
15	048543054511	Button Skip	1	Dom
	048543054512	Button Skip	1	A,B,C,D,E,F
16	048543054521	Knob Slide	2	
17	8545119110	Button Deck Sel.	1	
18	048545118911	Button Edit	1	Dom
	048545118912	Button Edit	1	A,B,C,D,E,F
19	048545119011	Button Pause	1	
20	8545118810	Button Repeat	2	
21	8553018010	Window Display	1	
22	048563006411	Door Tray	1	Dom
	048563006412	Door Tray	1	A,B,C,D,E,F
23	6122821710	Frame Mecha	1	
24	6555606710	Spring Eject L	1	
25	6555606720	Spring Eject R	1	
26	8562004310	Lid Cassette	2	
27	048562004411	Door Play Back	1	Dom
	048562004412	Door Play Back	1	A,B,C,D,E,F
28	9057079250	Label Silver	2	
29	048555046511	Window Door L	1	
30	048562004511	Door REC/Play	1	Dom
	048562004512	Door REC/Play	1	A,B,C,D,E,F
31	048555046521	Window Door R	1	
32	5708013810	Mechanism Deck	1	
33	6303002110	Guide Eject	1	
34	6303002010	Locker Eject L	1	
35	6303002020	Locker Eject R	1	
36	6555606610	Spring Lock L	1	
37	6555606620	Spring Lock R	1	
38	6308001830	Damper Oil	2	
39	5728000810	Ass'y Mecha CDP	1	
40	6505134810	BKT FIP	1	
41	7505206210	H/Sink	1	
42	7505206130	H/Sink	2	
43	4438113410	Jack RCA	1	
44	046103002711	Chassis Back	1	Dom
	046103002722	Chassis Back	1	D
	046103002721	Chassis Back	1	A
	046103002728	Chassis Back	1	E
	046103002727	Chassis Back	1	Migros
	046103002723	Chassis Back	1	Packard bell
	046103002726	Chassis Back	1	PT INDO
45	4658003710	SW Tact	25	
46	4618008610	Switch Slide	2	
P1	4002028100	PCB Deck Main	1	
P1-1	4002028110	PCB CDG	1	
P1-2	4002028120	PCB Front 1	1	
P1-3	4002028130	PCB Front 2	1	
P1-4	4002028140	PCB Front 3	1	
P1-5	4002028150	PCB Front 4	1	
P2	4002028200	PCB CD Main	1	
S1	8109230063	Screw #2BTC 3x8B	47	
S2	8109230063	Screw #2BTC 3x8B	5	
S3	8129230063	Screw #2FTC 3x8B	10	
S4	8159230061	Screw #2WPTC 3x8Y	10	
S5	8119130103	Screw #2PT 3x10B	2	
S6	8159230061	Screw #2WPTC 3x10Y	2	

PRODUCT SAFETY NOTICE

Each precaution in this manual should be follower during servicing. Components identified with the IEC symbol ⚠ in the parts list and the safety can be of special significance. When replacing a component identified with ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

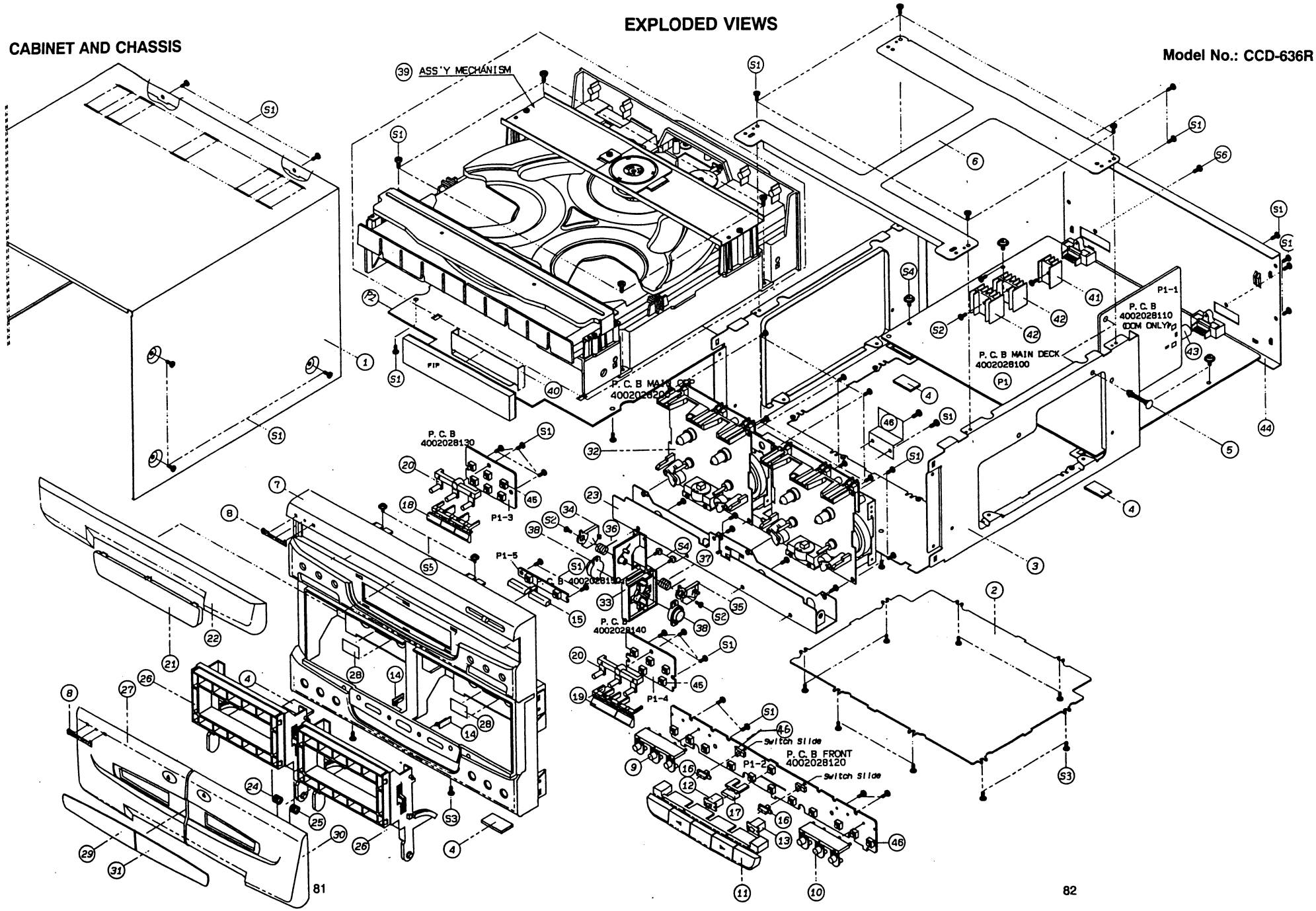
CD MECHA PARTS LIST

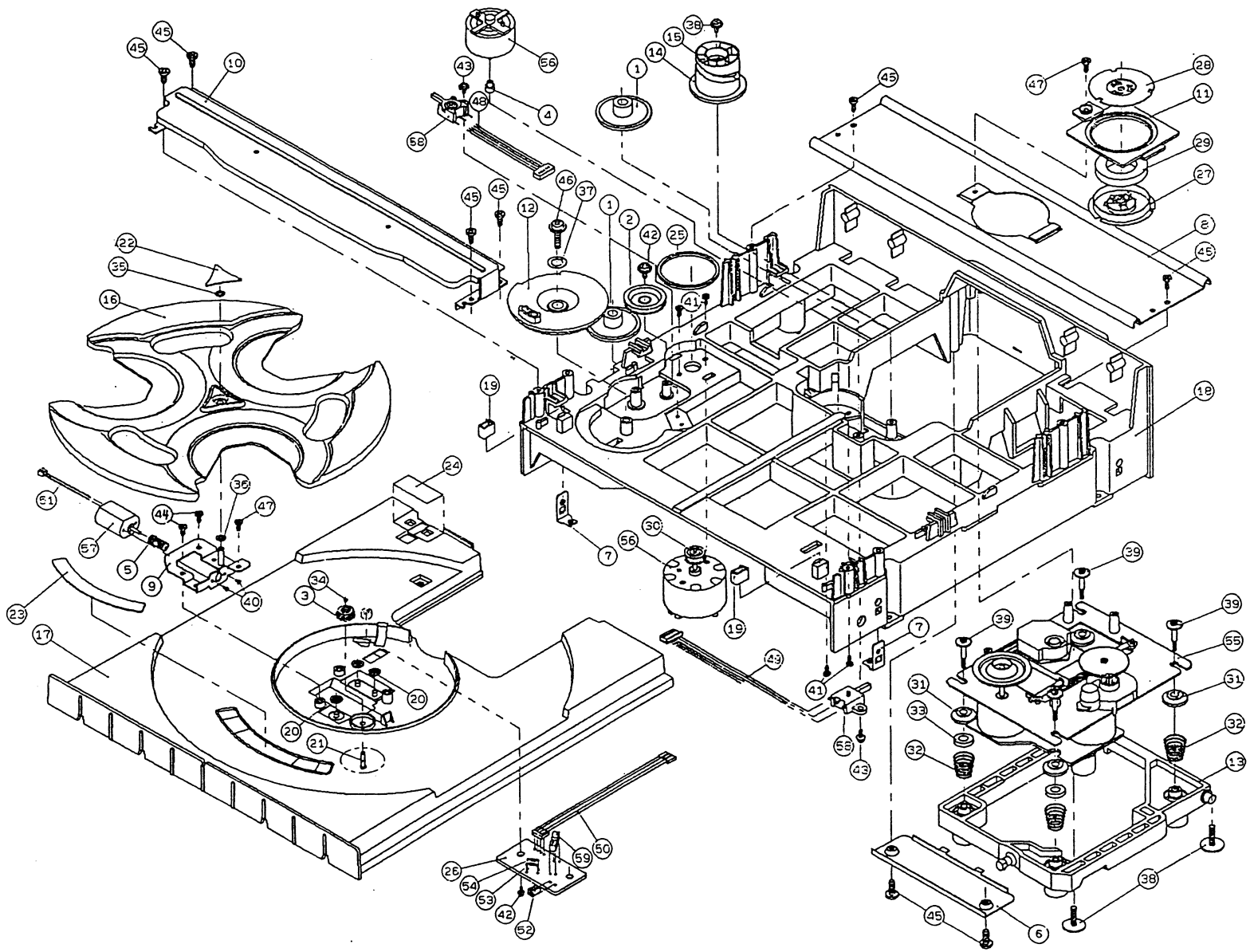
Ref. No.	Part No.	Description	Q'ty	Version
1	7105000410	Gear Center	2	
2	7105000510	Gear Pulley	1	
3	7105000610	Gear Roulette	1	
4	7105000710	Gear Motor	1	
5	7105000810	Gear Worm	1	
6	6125402910	Bracket Pickup	1	
7	6505133510	Bercket Side	2	
8	6023406720	Chuck Chassis	1	
9	6023801010	Bercket Motor	1	
10	6023801310	Frame Front	1	
11	6063103110	Guide Chuck	1	
12	7103001910	Gear Loading	1	
13	6062000410	Base D. U.	1	
14	7142000510	Cam Gear	1	
15	7142000610	Cover Cam	1	
16	7121400310	Roulette	1	
17	6021800410	Tray Roulette	1	
18	6021801310	Body Mecha	1	
19	6715022810	Rubber Limit	2	
20	6715023310	Rubber BKT	3	
21	7005007910	Shaft Gear Roulette	1	
22	6735011410	Cover Roulette	1	
23	6705022510	Sheet Tray	1	
24	6725003610	Sheet Tapping	1	
25	7165002510	Belt Loading	1	
26	4003517010	PCB Sensor	1	
27	6063103010	Base Magnet	1	
28	6023406610	Cover Magnet	1	
29	5125000910	Magnet	1	
30	7113001310	Pulley Motor	1	
31	6715018420	Rubber Damping	4	
32	6555008210	Spring Damping	4	
33	6705021910	Sponge Damping	2	
34	8338300710	Poly Washer(2.1)	1	
35	8338300910	Poly Washer(3.2)	1	
36	8338301110	Poly Washer(4.3)	1	
37	8338301210	Poly Washer(3.1)	1	
38	8155001210	Screw Mecha	3	
39	8155001110	Screw Damping	4	
40	8009120031	Screw BM 2x3Y	2	
41	8009128041	Screw BM 2.6x4Y	4	
42	8159128081	Screw #1 WPT 2.6x8Y	2	
43	8109128081	Screw #1 BT 2.6x8Y	2	
44	8109130081	Screw #1 BT 3x8Y	3	
45	8109130101	Screw #1 BT 3x10B	8	
46	8159130151	Screw #1 WPT 3x15Y	1	
47	8109430051	Screw FTTS 3x5Y	1	
48	436105080121	CNT Loading 5P	1	
49	436105180121	CNT Chucking 5P	1	
50	436204282432	CNT Sensor 4P	1	
51	436202070132	CNT Motor 2P	1	
52	436202070132	CNT Header 2P	1	
53	3069151970	Res. CF 150 1/5W	1	
54	3069103970	Res. CF 10k 1/5W	1	
55	5708012910	Drive Unit (KSM-2101AA-A)	1	
56	5558001810	Motor RF-500TB-12580	2	
57	5558200410	Motor FF-130SH-14230	1	
58	4838003410	S/W Lever SSCF-2100AA	2	
59	2408001111	Photo Sensor SG-23F1	1	

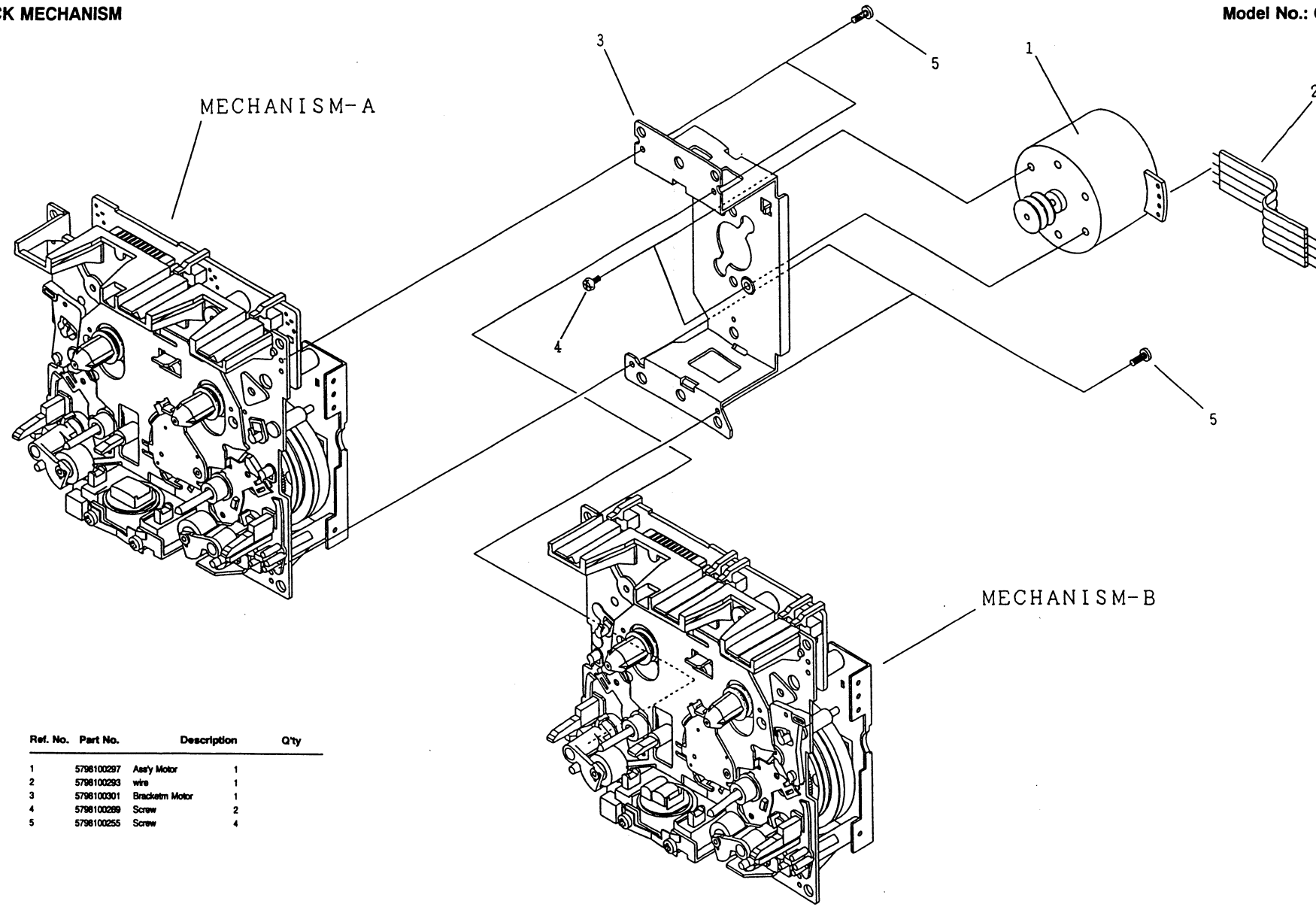
EXPLODED VIEWS

CABINET AND CHASSIS

Model No.: CCD-636R







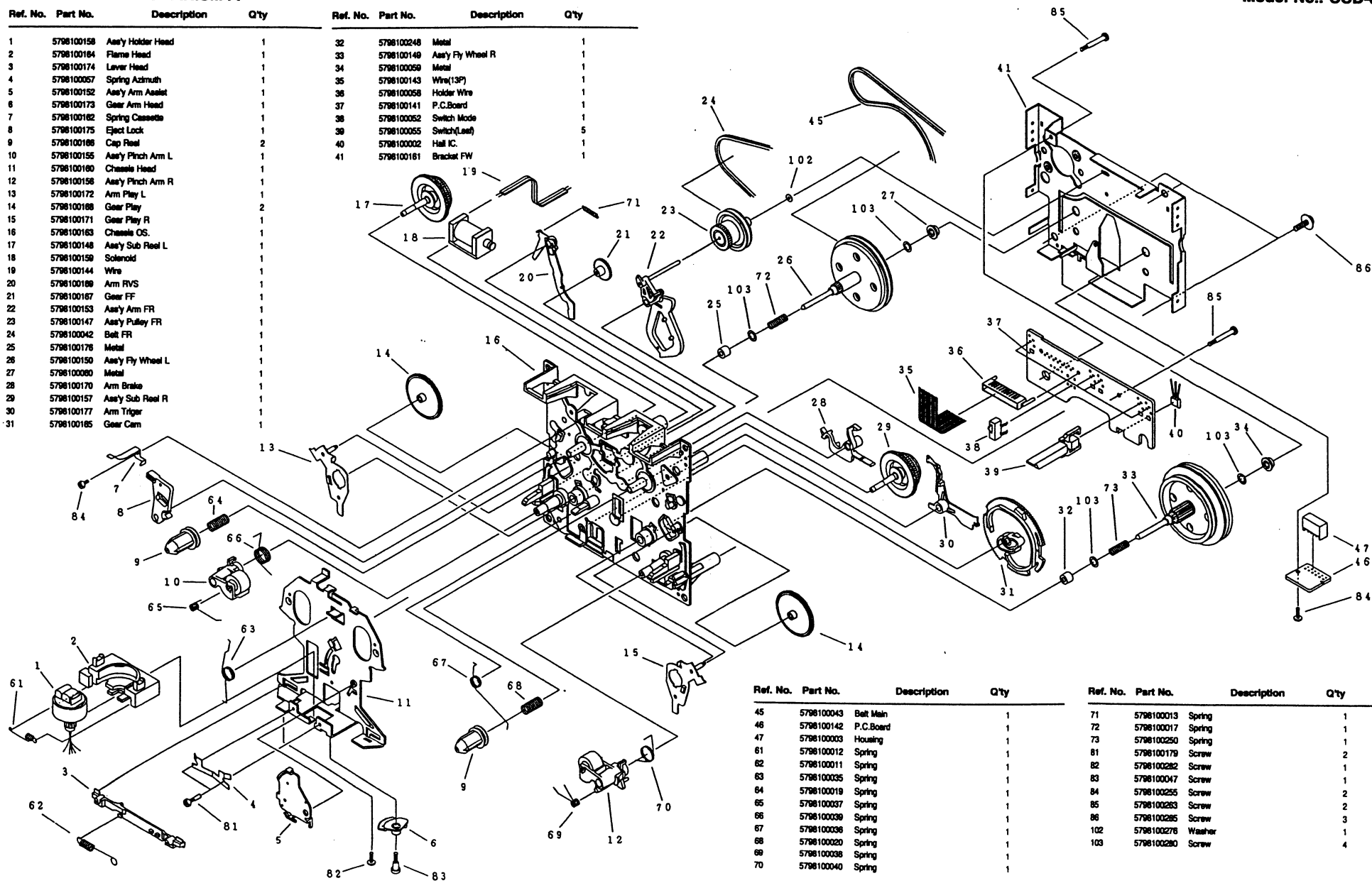
Ref. No.	Part No.	Description	Q'ty
1	5798100297	Ass'y Motor	1
2	5798100293	wire	1
3	5798100301	Bracketm Motor	1
4	5798100289	Screw	2
5	5798100255	Screw	4

DECK MECHANISM-A

Model No.: CCD-636R

Ref. No.	Part No.	Description	Q'ty
1	5798100158	Ass'y Holder Head	1
2	5798100164	Flame Head	1
3	5798100174	Lever Head	1
4	5798100057	Spring Azimuth	1
5	5798100152	Ass'y Arm Assist	1
6	5798100173	Gear Arm Head	1
7	5798100162	Spring Cassette	1
8	5798100175	Eject Lock	1
9	5798100166	Cap Reel	2
10	5798100155	Ass'y Pinch Arm L	1
11	5798100160	Chassis Head	1
12	5798100156	Ass'y Pinch Arm R	1
13	5798100172	Arm Play L	1
14	5798100168	Gear Play	2
15	5798100171	Gear Play R	1
16	5798100163	Chassis OS.	1
17	5798100148	Ass'y Sub Reel L	1
18	5798100159	Solenoid	1
19	5798100144	Wire	1
20	5798100169	Arm RVS	1
21	5798100167	Gear FF	1
22	5798100153	Ass'y Arm FR	1
23	5798100147	Ass'y Pulley FR	1
24	5798100042	Belt FR	1
25	5798100176	Metal	1
26	5798100150	Ass'y Fly Wheel L	1
27	5798100080	Metal	1
28	5798100170	Arm Brake	1
29	5798100157	Ass'y Sub Reel R	1
30	5798100177	Arm Trigar	1
31	5798100165	Gear Cam	1

Ref. No.	Part No.	Description	Q'ty
32	5798100248	Metal	1
33	5798100149	Ass'y Fly Wheel R	1
34	5798100059	Metal	1
35	5798100143	Wire(13P)	1
36	5798100058	Holder Wire	1
37	5798100141	P.C.Board	1
38	5798100052	Switch Mode	1
39	5798100055	Switch(Leaf)	5
40	5798100002	Hall IC.	1
41	5798100161	Bracket FW	1



Ref. No.	Part No.	Description	Q'ty
45	5798100043	Belt Main	1
46	5798100142	P.C.Board	1
47	5798100003	Housing	1
61	5798100012	Spring	1
62	5798100011	Spring	1
63	5798100035	Spring	1
64	5798100019	Spring	1
65	5798100037	Spring	1
66	5798100039	Spring	1
67	5798100036	Spring	1
68	5798100020	Spring	1
69	5798100038	Spring	1
70	5798100040	Spring	1

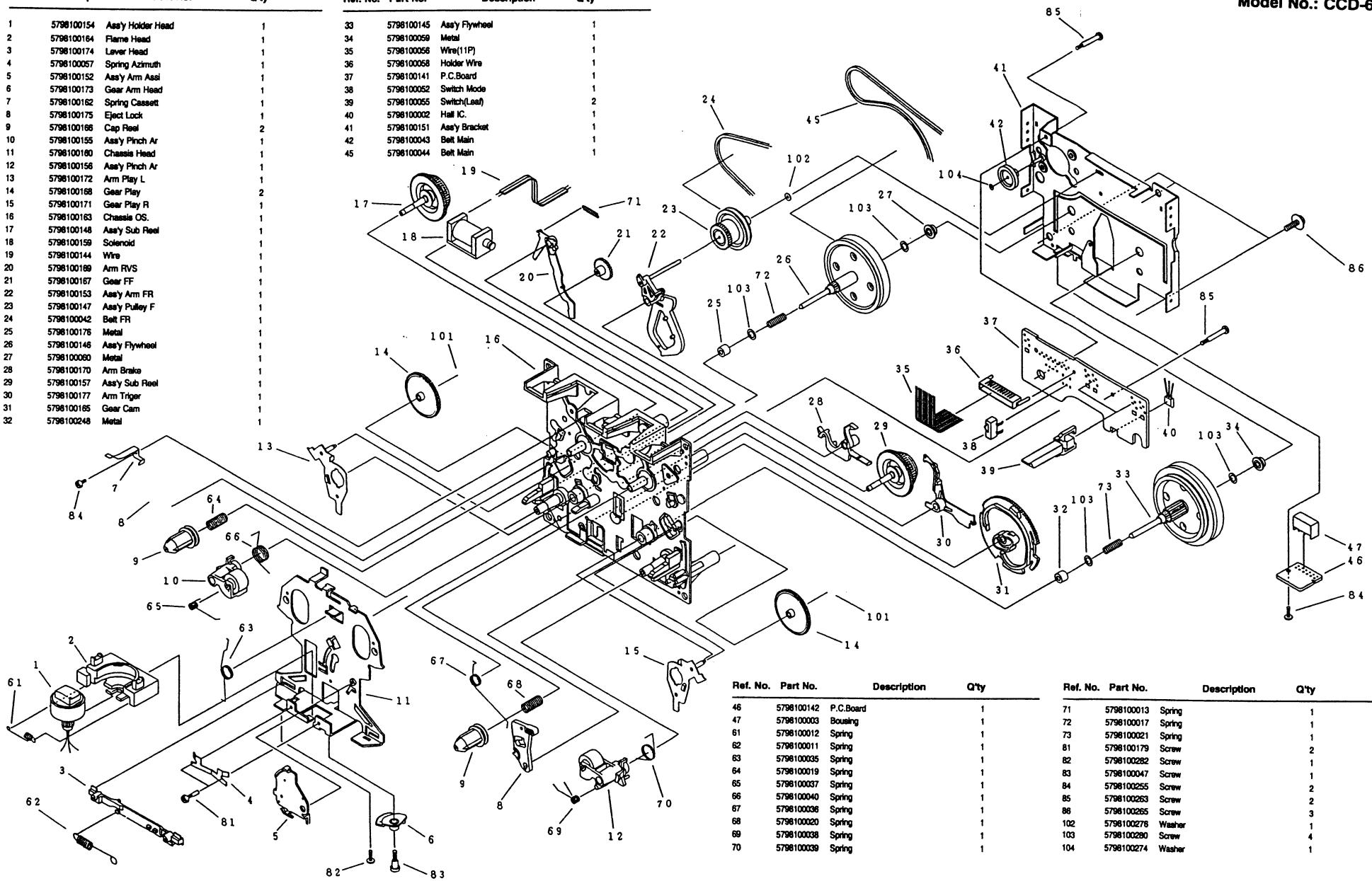
Ref. No.	Part No.	Description	Q'ty
71	5798100013	Spring	1
72	5798100017	Spring	1
73	5798100250	Spring	1
81	5798100179	Screw	2
82	5798100282	Screw	1
83	5798100047	Screw	1
84	5798100255	Screw	2
85	5798100283	Screw	2
86	5798100285	Screw	3
102	5798100276	Washer	1
103	5798100280	Screw	4

DECK MECHANISM-B

Model No.: CCD-636R

Ref. No.	Part No.	Description	Q'ty
1	5798100154	Ass'y Holder Head	1
2	5798100164	Flame Head	1
3	5798100174	Lever Head	1
4	5798100057	Spring Azimuth	1
5	5798100152	Ass'y Arm Assi	1
6	5798100173	Gear Arm Head	1
7	5798100162	Spring Cassett	1
8	5798100175	Eject Lock	1
9	5798100166	Cap Reel	2
10	5798100155	Ass'y Pinch Ar	1
11	5798100160	Chassis Head	1
12	5798100156	Ass'y Pinch Ar	1
13	5798100172	Arm Play L	1
14	5798100168	Gear Play	2
15	5798100171	Gear Play R	1
16	5798100163	Chassis OS.	1
17	5798100148	Ass'y Sub Reel	1
18	5798100159	Solenoid	1
19	5798100144	Wire	1
20	5798100169	Arm RVS	1
21	5798100167	Gear FF	1
22	5798100153	Ass'y Arm FR	1
23	5798100147	Ass'y Pulley F	1
24	5798100042	Belt FR	1
25	5798100176	Metal	1
26	5798100146	Ass'y Flywheel	1
27	5798100060	Metal	1
28	5798100170	Arm Brake	1
29	5798100157	Ass'y Sub Reel	1
30	5798100177	Arm Triger	1
31	5798100165	Gear Cam	1
32	5798100248	Metal	1

Ref. No.	Part No.	Description	Q'ty
33	5798100145	Ass'y Flywheel	1
34	5798100059	Metal	1
35	5798100056	Wire(11P)	1
36	5798100058	Holder Wire	1
37	5798100141	P.C.Board	1
38	5798100052	Switch Mode	1
39	5798100055	Switch(Leaf)	2
40	5798100002	Hall IC.	1
41	5798100151	Ass'y Bracket	1
42	5798100043	Belt Main	1
45	5798100044	Belt Main	1



Ref. No.	Part No.	Description	Q'ty
46	5798100142	P.C.Board	1
47	5798100003	Bousing	1
61	5798100012	Spring	1
62	5798100011	Spring	1
63	5798100035	Spring	1
64	5798100019	Spring	1
65	5798100037	Spring	1
66	5798100040	Spring	1
67	5798100036	Spring	1
68	5798100020	Spring	1
69	5798100038	Spring	1
70	5798100039	Spring	1

Ref. No.	Part No.	Description	Q'ty
71	5798100013	Spring	1
72	5798100017	Spring	1
73	5798100021	Spring	1
81	5798100179	Screw	2
82	5798100282	Screw	1
83	5798100047	Screw	1
84	5798100255	Screw	2
85	5798100263	Screw	2
86	5798100265	Screw	3
102	5798100276	Washer	1
103	5798100280	Screw	4
104	5798100274	Washer	1

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE:Products marked with ⚠ have special characterisstics important to safety.
If you replace any of these components, read carefully the product safety notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor tolerance—D:(±0.5%), J:(±5%), K:(±10%), M:(±20%), Z:(+80, -20%)

Ref. No.	Part No.	Description	Q'ty	Version
P2	**054101010007**	**ASS'Y P.C.B CD MAIN**		
C101/C102	3479347041	Electrolytic SG 47 uF 25 V M	2	
C103/C104	3519330935	Ceramic Tubular 33 pF 50 V J	2	
C105/C106	3479347041	Electrolytic SG 47 uF 25 V M	2	
C107/C108	3679473120	Mylar 0.047 uF 100 V J	2	
C109	3479347041	Electrolytic SG 47 uF 25 V M	1	
C111	3479347041	Electrolytic SG 47 uF 25 V M	1	
C112	3679473120	Mylar 0.047 uF 100 V J	1	
C113	3479347041	Electrolytic SG 47 uF 25 V M	1	
C114	3519104935	Ceramic Tubular 0.1 uF 50 V J	1	
C115/C116	3479347041	Electrolytic SG 47 uF 25 V M	2	
C117	3519104935	Ceramic Tubular 0.1 uF 50 V J	1	
C118/C119	3479347041	Electrolytic SG 47 uF 25 V M	2	
C121/C122	3479247871	Electrolytic SA 0.47 uF 50 V M	2	
C123	3519102935	Ceramic Tubular 1000 pF 50 V J	1	
C124	3479347041	Electrolytic SG 47 uF 25 V M	1	
C125	3479247871	Electrolytic SA 0.47 uF 50 V M	1	
C129	3679473120	Mylar 0.047 uF 100 V J	1	
C130	3479210871	Electrolytic SA 0.1 uF 50 V M	1	
C131	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C132	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C133	3519472935	Ceramic Tubular 0.0047 uF 50 V J	1	
C134	3679153120	Mylar 0.015 uF 100 V J	1	
C135	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C136	3479322071	Electrolytic SG 22 uF 50 V M	1	
C137	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C138	3679472120	Mylar 0.0047 uF 100 V J	1	
C139	3479210971	Electrolytic SA 1 uF 50 V M	1	
C140	3679222120	Mylar 0.0022 uF 100 V J	1	
C141	3479347041	Electrolytic SG 47 uF 25 V M	1	
C142	3519103935	Ceramic Tubular 0.01 uF 50 V J	1	
C143	3679104297	Mylar 0.1 uF 63 V K	1	
C144	3479347041	Electrolytic SG 47 uF 25 V M	1	
C145	3679104297	Mylar 0.1 uF 63 V K	1	
C146	3479347041	Electrolytic SG 47 uF 25 V M	1	
C147	3519103120	Mylar 0.01 uF 100 V J	1	
C148	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C149	3479347041	Electrolytic SG 47 uF 25 V M	1	
C150	3519103120	Mylar 0.01 uF 100 V J	1	
C151	3679473120	Mylar 0.047 uF 100 V J	1	
C152	3679222120	Mylar 0.0022 uF 100 V J	1	
C153	3679333120	Mylar 0.033 uF 100 V J	1	
C154	3519561935	Ceramic Tubular 560 pF 50 V J	1	
C155	3519472935	Ceramic Tubular 4700 pF 50 V J	1	
C156	3679333120	Mylar 0.033 uF 100 V J	1	
C157	3519103935	Ceramic Tubular 0.01 uF 50 V J	1	
C158	3479347041	Electrolytic SG 47 uF 25 V M	1	
C160	3479210871	Electrolytic SA 0.1 uF 50 V M	1	
C161	3479347041	Electrolytic SG 47 uF 25 V M	1	
C162	3479347041	Electrolytic SG 47 uF 25 V M	1	
C163	3519330935	Ceramic Tubular 33 pF 50 V J	1	
CNT101	4428525580	Wafer, 8P	1	
CNT102	4428525580	Wafer, 8P	1	
CNT103	4428525540	Wafer, 4P	1	
CNT104	4428525540	Wafer, 4P	1	
CNT105	4428513450	Wafer, 5P	1	
CNT106	436207353332	Lead Ass'y 7P 350mm	1	
CNT107	4428526580	Wafer, 7P	1	
CNT108	4428526286	Wafer IL-FPC B 16P	1	
CNT109	4428526306	Wafer IL-FPC B 18P	1	
CNT110	4428526590	Wafer, 7P	1	
CNT111	436208203332	Lead Ass'y 8P 200mm	1	
CNT112	436103112632	Lead Ass'y 3P 120mm	1	
CNT113	4428513450	Wafer, 5P	1	
CNT114	436211263332	Lead Ass'y 11P 260mm	1	
D100/D101	2258322101	1N4148M, Switching	2	
D102	2258599121	Diode Zener, UZ 6,8BSC	1	
D103-D109	2258322101	1N4148M, Switching	7	
D110	2258599121	Diode Zener, UZ 6,8BSC	1	
D111-D117	2258322101	1N4148M, Switching	7	
IC101	2138022105	CXA1081M	1	
IC102	2138022103	CXA1082BQ	1	
IC103	2168000118	STA341MI	1	
IC104	2138022110	CXD1167Q, DSP	1	
IC105	2138322165	CXP82220-104Q	1	
IC106	2138000196	SM5871AS	1	
IC107/IC108	2168206104	KIA4559P/KIA75559P	2	
L101	2648610082	Coil Inductor, 10uH	1	
Q100	2208206113	MPSA56Y, PNP, Silicon	1	
Q101	2208606114	MPSA06Y, NPN, Silicon	1	
Q102	2208206113	MPSA56Y, PNP, Silicon	1	
Q103	2208606114	MPSA06Y, NPN, Silicon	1	
Q104/Q105	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	2	
Q106	2208606114	MPSA06Y, NPN, Silicon	1	
Q107/Q108	2208206113	MPSA56Y, PNP, Silicon	2	
Q109	2208606114	MPSA06Y, NPN, Silicon	1	
Q111	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q112/Q113	2208622109	DTC144E, NPN, Silicon	2	
Q114	2208206105	KTA1015Y/BKTA1266, PNP Silicon	1	
R100	3069223970	Carbon Film 22 kohm 1/5W J	1	
R102	3069104970	Carbon Film 100 kohm 1/5W J	1	
R103	3069124970	Carbon Film 120 kohm 1/5W J	1	
R104/R105	3069104970	Carbon Film 100 kohm 1/5W J	2	
R106	3069563970	Carbon Film 56 kohm 1/5W J	1	
R107	3069562970	Carbon Film 5.6 kohm 1/5W J	1	
R108	3069104970	Carbon Film 100 kohm 1/5W J	1	
R109	3069562970	Carbon Film 5.6 kohm 1/5W J	1	
R110	3069104970	Carbon Film 100 kohm 1/5W J	1	
R111/R112	3069123970	Carbon Film 12 kohm 1/5W J	2	
R113/R114	3069562970	Carbon Film 5.6 kohm 1/5W J	2	
R115/R116	3069104970	Carbon Film 100 kohm 1/5W J	2	
R117	3069472970	Carbon Film 4.7 kohm 1/5W J	1	
R118	3069104970	Carbon Film 100 kohm 1/5W J	1	
R119	3069103970	Carbon Film 10 kohm 1/5W J	1	
R120	3069104970	Carbon Film 100 kohm 1/5W J	1	
R122/R123	3069563970	Carbon Film 56 kohm 1/5W J	2	
R124	3069681970	Carbon Film 680 ohm 1/5W J	1	
R125-R128	3069563970	Carbon Film 56 kohm 1/5W J	4	
R129-R131	3069471970	Carbon Film 470 ohm 1/5W J	3	
R134	3069105970	Carbon Film 1M ohm 1/5W J	1	
R135	3069104970	Carbon Film 100 kohm 1/5W J	1	
R136	3069203970	Carbon Film 20 kohm 1/5W J	1	
R137	3069102970	Carbon Film 1 kohm 1/5W J	1	
R138/R139	3069103970	Carbon Film 10 kohm 1/5W J	2	
R140	3069223970	Carbon Film 22 kohm 1/5W J	1	
R141	3069362970	Carbon Film 3.6 kohm 1/5W J	1	
R142	3069124970	Carbon Film 120 kohm 1/5W J	1	
R143	3069102970	Carbon Film 1 kohm 1/5W J	1	
R144	3069223970	Carbon Film 22 kohm 1/5W J	1	
R145	3069273970	Carbon Film 27 kohm 1/5W J	1	
R146	3069104970	Carbon Film 100 kohm 1/5W J	1	
R147	3069222970	Carbon Film 2.2 kohm 1/5W J	1	
R148	3069229970	Carbon Film 2.2 ohm 1/5W J	1	
R149/R150	3069273970	Carbon Film 27 kohm 1/5W J	2	
R151	3069103970	Carbon Film 10 kohm 1/5W J	1	
R152	3069229970	Carbon Film 2.2 ohm 1/5W J	1	
R153	3069474970	Carbon Film 470 kohm 1/5W J	1	
R154	3069822970	Carbon Film 8.2 kohm 1/5W J	1	
R155-R157	3069104970	Carbon Film 100 kohm 1/5W J	3	
R158	3069243970	Carbon Film 24 kohm 1/5W J	1	
R159	3069124970	Carbon Film 120 kohm 1/5W J	1	
R160	3069101970	Carbon Film 100 ohm 1/5W J	1	
R161	3069220970	Carbon Film 22 ohm 1/5W J	1	
R162	3069153970	Carbon Film 15K oh 1/5W J	1	
R163/R164	3069823970	Carbon Film 82 kohm 1/5W J	2	
R165	3069473970	Carbon Film 47 kohm 1/5W J	1	
R166	3069101970	Carbon Film 100 ohm 1/5W J	1	
R167/R168	3069472970	Carbon Film 4.7 kohm 1/5W J	2	
R169	3069103970	Carbon Film 10 kohm 1/5W J	1	
R170	3069223970	Carbon Film 22 kohm 1/5W J	1	
R171	3069103970	Carbon Film 10 kohm 1/5W J	1	
R172/R173	3069100970	Carbon Film 10 ohm 1/5W J	2	
R174/R175	3069563970	Carbon Film 56 kohm 1/5W J	2	
R176	3069229970	Carbon Film 2.2 ohm 1/5W J	1	
R177	3069102970	Carbon Film 1 kohm 1/5W J	1	
R212	3069105970	Carbon Film 1M ohm 1/5W J	1	
VR100	3248010243	RES Semi EVN-DJAA03B13	1	
VR101/VR102	3248020343	RES Semi EVN-DJAA03B24	2	
VR103	3248050343	RES Semi EVN-DJAA03B54	1	
VR104	3248020343	RES Semi EVN-DJAA03B24	1	
P1-1	**054100810002**	**ASS'Y P.C.B CDG Dom(Only)**		
43	4438113410	Jack RCA	1	
C501/C502	3519330935	Ceramic Tubular 33 pF 50 V J	2	
C504	3479233031	Electrolytic SA 33 uF 16 V M	1	
C507	3409347139	Electrolytic SG 470 uF 16 V M	1	
C508	3479347041	Electrolytic SG 47 uF 25 V M	1	
C509	3519104935	Ceramic Tubular 0.1 uF 50 V Z	1	
C510	3479347041	Electrolytic SG 47 uF 25 V M	1	
C511	3519104935	Ceramic Tubular 0.1 uF 50 V Z	1	
CNT501	4428516710	Wafer 8P	1	
IC501	2138401160	GM71C454A	1	
IC502	2138017137	LC7870E, Graphic IC	1	
Q501-Q504	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	4	
R502	3069680970	Carbon Film 68 ohm 1/5W J	1	
R503	3069202970	Carbon Film 2 kohm 1/5W J	1	
R504	3069302970	Carbon Film 3 kohm 1/5W J	1	
R505	3069132970	Carbon Film 1.3 kohm 1/5W J	1	
R506	3069302970	Carbon Film 3 kohm 1/5W J	1	
R507	3069122970	Carbon Film 1.2 kohm 1/5W J	1	
R508	3069132970	Carbon Film 1.3 kohm 1/5W J	1	
R509	3069301970	Carbon Film 300 ohm 1/5W J	1	
R510	3069221970	Carbon Film 220 ohm 1/5W J	1	
P1-3	**054101010004**	**ASS'Y P.C.B FRONT**		
45	4658003710	SW Tact	6	
D501-D504	2258322101	1N4148M, Switching	4	
P1-4	**054101010005**	**ASS'Y P.C.B FRONT**		
45	4658003710	SW Tact	5	
D505-D508	2258322101	1N4148M, Switching	4	
P1-5	**054101010006**	**ASS'Y P.C.B FRONT**		
45	4658003710	SW Tact	2	
P1	**054101010001**	**ASS'Y P.C.B DECK MAIN**		
41	7505206210	H/Sink	1	
42	7505206130	H/Sink	2	
C101	3409322249	Electrolytic SG 2200 uF 25 V M	1	
C102	3409333249	Electrolytic SG 3300 uF 25 V M	1	
C103/C104	3679473120	Mylar 0.047 uF 100 V J	2	
C105	3409322249	Electrolytic SG 2200 uF 25 V M	1	
C106/C109	3519561935	Ceramic Tubular 560 pF 50 V J	2	
C111	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C112	3679223120	Mylar 0.022 uF 100 V J	1	
C113	3479310131	Electrolytic SG 100 uF 16 V M	1	
C114	3519103120	Mylar 0.01 uF 100 V J	1	
C115	3519222935	Ceramic Tubular 2200 pF 50 V J	1	
C116/C117	3679562120	Mylar 0.0056 uF 100 V J	2	
C121	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C124	3479347041	Electrolytic SG 47 uF 25 V M	1	
C126	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C127	3519221935	Ceramic Tubular 220 pF 50 V J	1	
C128	3479347041	Electrolytic SG 47 uF 25 V M	1	
C129	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C130	3479347041	Electrolytic SG 47 uF 25 V M	1	
C131	3679222120	Mylar 0.0022 uF 100 V J	1	
C132	3479347041	Electrolytic SG 47 uF 25 V M	1	
C133	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C134	3519821935	Ceramic Tubular 820 pF 50 V J	1	
C135	3519821935	Ceramic Tubular 820 pF 50 V J	1	
C136	3479347041	Electrolytic SG 47 uF 25 V M	1	
C137-C139	3519101935	Ceramic Tubular 100 pF 50 V J	3	
C140	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C141	3519221935	Ceramic Tubular 220 pF 50 V J	1	
C142	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C143/C144	3679223120	Mylar 0.022 uF 100 V J	2	
C145	3479222971	Electrolytic SA 2.2 uF 50 V M	1	
C146/C147	3479247971	Electrolytic SA 4.7 uF 50 V M	2	
C148	3479210971	Electrolytic SA 1 uF 50 V M	1	
C149	3679222120	Mylar 0.0022 uF 100 V J	1	
C150	3479268871	Electrolytic SA 0.68 uF 50 V M	1	
C151	3479347041	Electrolytic SG 47 uF 25 V M	1	
C152	3679183120	Mylar 0.018 uF 100 V J	1	
C153	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C154	3479347041	Electrolytic SG 47 uF 25 V M	1	
C155/C156	3479210071	Electrolytic SA 10 uF 50 V M	2	
C157	3479233871	Electrolytic SA 0.33 uF 50 V M	1	
C158	3479347041	Electrolytic SG 47 uF 25 V M	1	
C159	3679183120	Mylar 0.018 uF 100 V J	1	
C160	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C161	3479347041	Electrolytic SG 47 uF 25 V M	1	
C162	3519222935	Ceramic Tubular 2200 pF 50 V J	1	
C163	3479310141	Electrolytic SG 100 uF 25 V M	1	
C164	3519222935	Ceramic Tubular 2200 pF 50 V J	1	
C165	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C166	3479310141	Electrolytic SG 100 uF 25 V M	1	
C167	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C168	3519104935	Ceramic Tubular 0.1 uF 50 V K	1	
C169	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C170	3519104935	Ceramic Tubular 0.1 uF 50 V K	1	
C171	3479322131	Electrolytic SG 220 uF 16 V M	1	
C172	3479247871	Electrolytic SA 0.47 uF 50 V M	1	
C173	3479210971	Electrolytic SA 1 uF 50 V M	1	
C174	3479347041	Electrolytic SG 47 uF 25 V M	1	
C175/C176	3679183120	Mylar 0.018 uF 100 V J	2	
C177	3479222971	Electrolytic SA 1 uF 50 V M	1	
C178	3479347041	Electrolytic SG 47 uF 25 V M	1	
C179/C180	3479247971	Electrolytic SA 4.7 uF 50 V M	2	

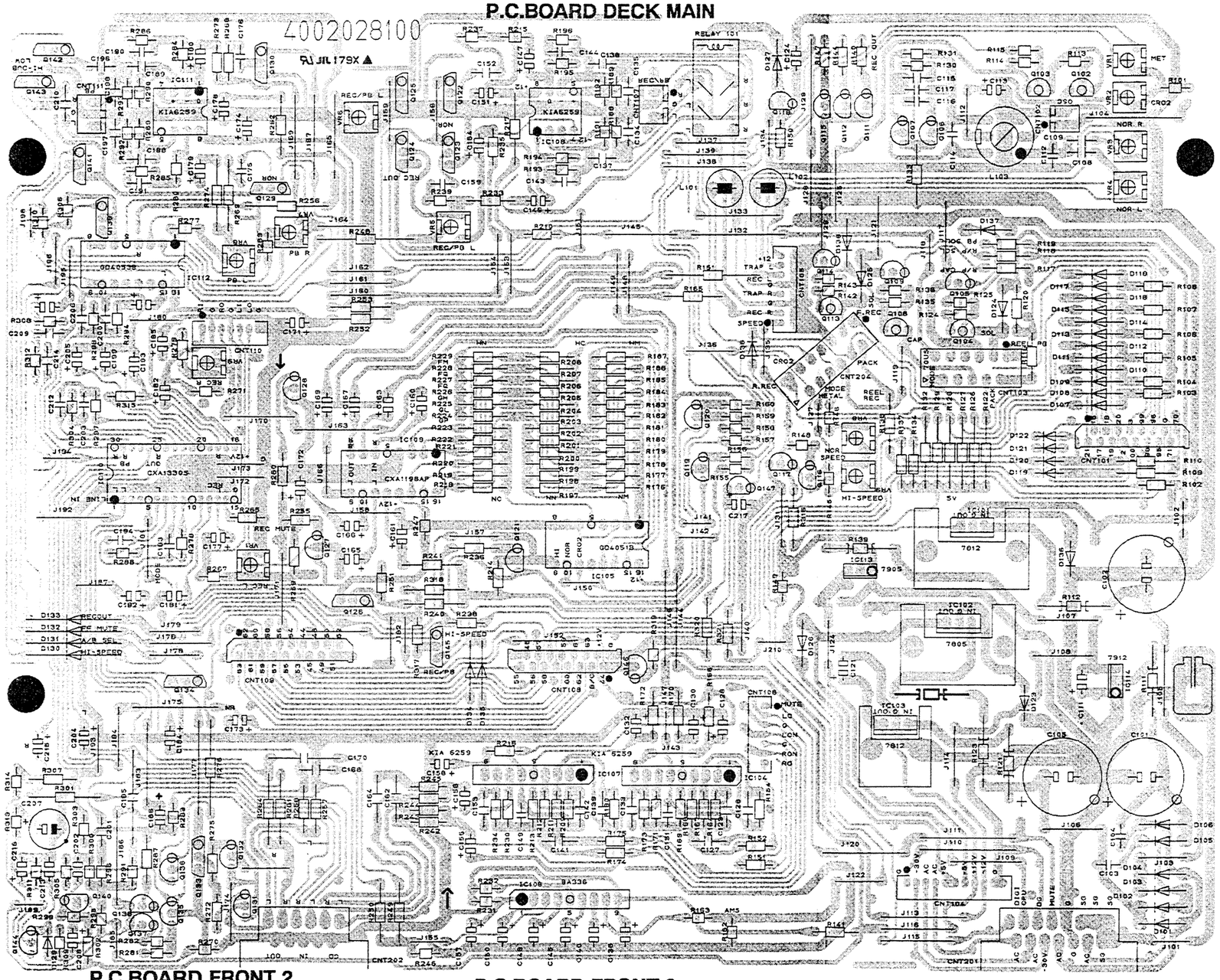
Ref. No.	Part No.	Description	Q'ty	Version
C181	3479233871	Electrolytic SA 0.33 uF 50 V M	1	
C182	3479222971	Electrolytic SA 1 uF 50 V M	1	
C183	3679222120	Mylar 0.0022 uF 100 V J	1	
C184	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C185	3479247871	Electrolytic SA 0.47 uF 50 V M	1	
C186/C187	3479247971	Electrolytic SA 4.7 uF 50 V M	2	
C188/C189	3519101935	Ceramic Tubular 100 pF 50 V J	2	
C190/C191	3679223120	Mylar 0.022 uF 100 V J	2	
C192	3479256871	Electrolytic SA 0.56 uF 50 V M	1	
C193	3479210071	Electrolytic SA 10 uF 50 V M	1	
C194	3679222120	Mylar 0.0022 uF 100 V J	1	
C195	3519104935	Ceramic Tubular 0.1 uF 50 V K	1	
C196	3519331935	Ceramic Tubular 330 pF 50 V J	1	
C197	3519471935	Ceramic Tubular 470 pF 50 V J	1	
C198	3519471935	Ceramic Tubular 470 pF 50 V J	1	
C199	3479233871	Electrolytic SA 0.33 uF 50 V M	1	
CNT101	4428526285	Wafer IL-FPC A 16P	1	
CNT102	4428517510	Wafer 2P	1	
CNT103	4428511800	Wafer 11P	1	
CNT104	4428517010	Wafer 11P	1	
CNT105	4428516710	Wafer 8P	1	
CNT106	4428516610	Wafer 7P	1	
CNT107	4428517610	Wafer 3P	1	
CNT108	4428526285	Wafer IL-FPC A 16P	1	
CNT109	4428526305	Wafer IL-FPC A 18P	1	
CNT110	4428516610	Wafer 7P	1	
CNT111	4428517610	Wafer 3P	1	
D101-D106	2258100135	Diode, 1N4002	6	
D107-D123	2258322101	1N4148M, Switching	7	
D124-D127	2258100135	Diode, 1N4002	4	
D129-D136	2258322101	1N4148M, Switching	8	
D137/D138	2258100135	Diode, 1N4002	2	
D150	2258322101	1N4148M, Switching	1	
IC101	2168606104	KIA7812P, Regulator	1	
IC102	2168606103	KIA7805P, Regulator	1	
IC103	2168606104	KIA7812P, Regulator	1	
IC104	2168206106	IC, KIA6259S, OP AMP	1	
IC105	2138001134	GD4051B, Switching	1	
IC106	2168022105	BA336	1	
IC107/IC108	2168206106	IC, KIA6259S, OP AMP	2	
IC109	2168022124	CXA1196AP	1	
IC110	2168022123	IC, CXA1330S	1	
IC111	2168206107	IC, KIA6259P, OP AMP	1	
IC112	2138001117	GD4053B, Switching	1	
IC113	2168600105	GL7905, Regulator	1	
IC114	2168609102	KA7912, Regulator	1	
L101/L102	2658501150	Coil Trap Bias 389AC-K5049	2	
L103	2638601350	Coil OSC Bias CQN-K5174	1	
L110-L112	2648610082	Coil Inductor, 10uH	3	
Q102	2228407117	KTC2236A/KTC3205, NPN, Silicon	1	
Q103/Q104	2208206113	MPSA56Y, PNP, Silicon	2	
Q105	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q106/Q107	2228407117	KTC2236A/KTC3205, NPN, Silicon	2	
Q108	2208206113	MPSA56Y, PNP, Silicon	1	
Q109	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q111/Q112	2208622106	DTC114YS, NPN, Silicon	2	
Q113	2208206113	MPSA56Y, PNP, Silicon	1	
Q114	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q115	2208622106	DTC114YS, NPN, Silicon	1	
Q116-Q121	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	6	
Q122-Q125	2208622106	DTC114YS, NPN, Silicon	4	
Q126	2208622108	DTC114TS, NPN, Silicon	1	
Q127/Q128	2208606112	KTD1302B, NPN, Silicon	2	
Q129/Q130	2208622106	DTC114YS, NPN, Silicon	2	

Ref. No.	Part No.	Description	Q'ty	Version
Q131/Q132	2208606112	KTD1302B, NPN, Silicon	2	
Q133	2208222105	DTA114YS	1	
Q134	2208622108	DTC114TS, NPN, Silicon	1	
Q135-Q138	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	4	
Q139	2208622108	DTC114TS, NPN, Silicon	1	
Q140	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q141	2208622108	DTC114TS, NPN, Silicon	1	
Q142/Q143	2208622106	DTC114YS, NPN, Silicon	2	
Q144	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	1	
Q145	2208622108	DTC114TS, NPN, Silicon	1	
Q146/Q147	2208606104	BKTC3198Y/KTC1815Y, NPN Silicon	2	
R101	3069104970	Carbon Film 100 kohm 1/5W J	1	
R102	3069183970	Carbon Film 18 kohm 1/5W J	1	
R103-R110	3069472970	Carbon Film 4.7 kohm 1/5W J	8	
R111	3029100472	Metal Film 10 ohm 1W	1	
R112	3029479470	Metal Film 4.7 ohm 1W	1	
R113	3069152970	Carbon Film 1.5 kohm 1/5W J	1	
R114	3069104970	Carbon Film 100 kohm 1/5W J	1	
R115	3069102970	Carbon Film 1 kohm 1/5W J	1	
R116	3069103970	Carbon Film 10 kohm 1/5W J	1	
R117-R119	3069472970	Carbon Film 4.7 kohm 1/5W J	3	
R120	3069183970	Carbon Film 18 kohm 1/5W J	1	
R121	3029479470	Metal Film 4.7 ohm 1W	1	
R122	3069473970	Carbon Film 47 kohm 1/5W J	1	
R123	3029569470	Metal Film 5.6 ohm 1W	1	
R124	3069473970	Carbon Film 47 kohm 1/5W J	1	
R125	3069151970	Carbon Film 150 ohm 1/5W J	1	
R126-R129	3069473970	Carbon Film 47 kohm 1/5W J	4	
R130/R131	3069333970	Carbon Film 33 kohm 1/5W J	2	
R132-R135	3069473970	Carbon Film 47 kohm 1/5W J	4	
R136	3069151970	Carbon Film 150 ohm 1/5W J	1	
R137	3069473970	Carbon Film 47 kohm 1/5W J	1	
R138	3069103970	Carbon Film 10 kohm 1/5W J	1	
R139	3069479270	Carbon Film 4.7 ohm 1/4W	1	
R141	3069470970	Carbon Film 47 ohm 1/5W J	1	
R142	3069473970	Carbon Film 47 kohm 1/5W J	1	
R143	3069151970	Carbon Film 150 ohm 1/5W J	1	
R145	3069432970	Carbon Film 4.3 kohm 1/5W J	1	
R146	3069302970	Carbon Film 3 kohm 1/5W J	1	
R148	3069103970	Carbon Film 10 kohm 1/5W J	1	
R149	3069104970	Carbon Film 100 kohm 1/5W J	1	
R150	3069472970	Carbon Film 4.7 kohm 1/5W J	1	
R151/R152	3069103970	Carbon Film 10 kohm 1/5W J	2	
R154	3069243970	Carbon Film 24 kohm 1/5W J	1	
R155	3069102970	Carbon Film 1 kohm 1/5W J	1	
R156	3069103970	Carbon Film 10 kohm 1/5W J	1	
R157-R159	3069102970	Carbon Film 1 kohm 1/5W J	3	
R160	3069103970	Carbon Film 10 kohm 1/5W J	1	
R161	3069562970	Carbon Film 5.6 kohm 1/5W J	1	
R162	3069183970	Carbon Film 18 kohm 1/5W J	1	
R163	3069103970	Carbon Film 10 kohm 1/5W J	1	
R164	3069243970	Carbon Film 24 kohm 1/5W J	1	
R165	3069562970	Carbon Film 5.6 kohm 1/5W J	1	
R166	3069470970	Carbon Film 47 ohm 1/5W J	1	
R167/R168	3069752970	Carbon Film 7.5 kohm 1/5W J	2	
R169	3069682970	Carbon Film 6.8k ohm 1/5W J	1	
R170	3069470970	Carbon Film 47 ohm 1/5W J	1	
R171	3069682970	Carbon Film 6.8k ohm 1/5W J	1	
R172	3069470970	Carbon Film 47 ohm 1/5W J	1	
R173	3069562970	Carbon Film 5.6k ohm 1/5W J	1	
R174/R175	3069103970	Carbon Film 10 kohm 1/5W J	2	
R176	3069124970	Carbon Film 120 kohm 1/5W J	1	
R177	3069183970	Carbon Film 18 kohm 1/5W J	1	
R178	3069243970	Carbon Film 24 kohm 1/5W J	1	

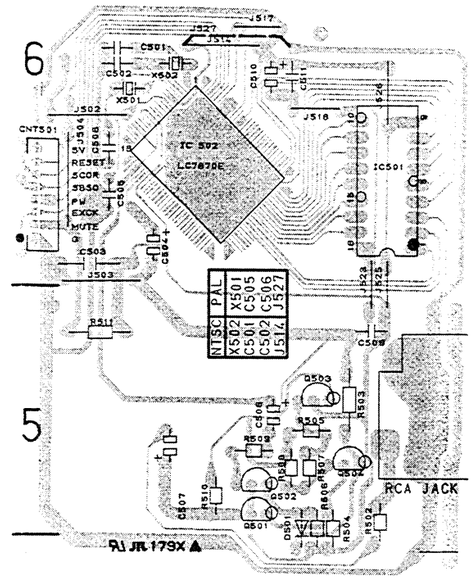
Ref. No.	Part No.	Description	Q'ty	Version
R179	3069154970	Carbon Film 150 kohm 1/5W J	1	
R180	3069393970	Carbon Film 39 kohm 1/5W J	1	
R181/R182	3069104970	Carbon Film 100 kohm 1/5W J	2	
R183/R184	3069203970	Carbon Film 20 kohm 1/5W J	2	
R185	3069753970	Carbon Film 75 kohm 1/5W J	1	
R186	3069473970	Carbon Film 47 kohm 1/5W J	1	
R187	3069623970	Carbon Film 62 kohm 1/5W J	1	
R188/R189	3069104970	Carbon Film 100 kohm 1/5W J	2	
R190	3069243970	Carbon Film 24 kohm 1/5W J	1	
R191/R192	3069390970	Carbon Film 39 ohm 1/5W J	2	
R193	3069104970	Carbon Film 100 kohm 1/5W J	1	
R194/R195	3069682970	Carbon Film 6.8 kohm 1/5W J	2	
R196	3069104970	Carbon Film 100 kohm 1/5W J	1	
R197	3069563970	Carbon Film 56 kohm 1/5W J	1	
R198	3069103970	Carbon Film 10 kohm 1/5W J	1	
R199	3069153970	Carbon Film 15 kohm 1/5W J	1	
RLY101	5528001780	Relay, G5V-2 DC12V	1	
VR101/102	3248010343	RES Semi EVN-DJAA03B14	2	
VR103/104	3248010443	RES Semi EVN-DJAA03B15	2	
VR105/106	3248020243	RES Semi EVN-DJAA03B23	2	
VR107-112	3248010343	RES Semi EVN-DJAA03B14	6	
C200	3519221935	Ceramic Tublar 220 pF 50 V J	1	
C201	3519104935	Ceramic Tublar 0.1 uF 50 V J	1	
C202	3479210971	Electrolytic SA 1 uF 50 V M	1	
C203	3679222120	Mylar 0.0022 uF 100 V J	1	
C204	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C205	3479256871	Electrolytic SA 0.56 uF 50 V	1	
C206	3519271935	Ceramic Tublar 270 pF 50 V J	1	
C207	3479322131	Electrolytic SG 220 uF 16 V M	1	
C208	3479210071	Electrolytic SA 10 uF 50 V M	1	
C209	3519221935	Ceramic Tublar 220 pF 50 V J	1	
C210	3519331935	Ceramic Tublar 330 pF 50 V J	1	
C211	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C212	3679222120	Mylar 0.0022 uF 100 V J	1	
C213	3479210871	Electrolytic SA 0.1 uF 50 V M	1	
C214	3519271935	Ceramic Tublar 270 pF 50 V J	1	
C215	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C216	3479222971	Electrolytic SA 2.2 uF 50 V M	1	
C217	3479322071	Electrolytic SG 22 uF 50 V M	1	
C220/C221	3519471935	Ceramic Tublar 470 pF 50 V J	2	
CNT201	4428515820	Wafer 15P	1	
CNT202	4428511820	Wafer 11P	1	
CNT204	4428513800	Wafer 13P	1	
R200	3069224970	Carbon Film 220 kohm 1/5W J	1	
R201	3069513970	Carbon Film 51 kohm 1/5W J	1	
R202	3069563970	Carbon Film 56 kohm 1/5W J	1	
R203	3069104970	Carbon Film 100 kohm 1/5W J	1	
R204/R205	3069153970	Carbon Film 15 kohm 1/5W J	2	
R206	3069104970	Carbon Film 100 kohm 1/5W J	1	
R207	3069473970	Carbon Film 47 kohm 1/5W J	1	
R208	3069623970	Carbon Film 62 kohm 1/5W J	1	
R209	3069243970	Carbon Film 24 kohm 1/5W J	1	
R210	3069103970	Carbon Film 10 kohm 1/5W J	1	
R211/R212	3069752970	Carbon Film 7.5 kohm 1/5W J	2	
R213	3069682970	Carbon Film 6.8k ohm 1/5W J	1	
R214	3069102970	Carbon Film 1 kohm 1/5W J	1	
R215	3069302970	Carbon Film 3 kohm 1/5W J	1	
R216/R217	3069470970	Carbon Film 47 ohm 1/5W J	2	
R218	3069184970	Carbon Film 180 kohm 1/5W J	1	
R219	3069123970	Carbon Film 12 kohm 1/5W J	1	
R220	3069333970	Carbon Film 33 kohm 1/5W J	1	
R221	3069224970	Carbon Film 220 kohm 1/5W J	1	
R222	3069473970	Carbon Film 47 kohm 1/5W J	1	
R223	3069433970	Carbon Film 43 kohm 1/5W J	1	

Ref. No.	Part No.	Description	Q'ty	Version
R224	3069513970	Carbon Film 51 kohm 1/5W J	1	
R225	3069123970	Carbon Film 12 kohm 1/5W J	1	
R226	3069103970	Carbon Film 10 kohm 1/5W J	1	
R227	3069124970	Carbon Film 120 kohm 1/5W J	1	
R228	3069393970	Carbon Film 39 kohm 1/5W J	1	
R229	3069823970	Carbon Film 82 kohm 1/5W J	1	
R230	3069682970	Carbon Film 6.8k ohm 1/5W J	1	
R231	3069394970	Carbon Film 390 kohm 1/5W J	1	
R232	3069274970	Carbon Film 270 kohm 1/5W J	1	
R233	3069302970	Carbon Film 3 kohm 1/5W J	1	
R234	3069562970	Carbon Film 5.6k ohm 1/5W J	1	
R235	3069470970	Carbon Film 47 ohm 1/5W J	1	
R236	3069103970	Carbon Film 10k ohm 1/5W J	1	
R237	3069302970	Carbon Film 3 kohm 1/5W J	1	
R238	3069103970	Carbon Film 10 kohm 1/5W J	1	
R239	3069302970	Carbon Film 3 kohm 1/5W J	1	
R240	3069103970	Carbon Film 10 kohm 1/5W J	1	
R241	3069470970	Carbon Film 47 ohm 1/5W J	1	
R242	3069681970	Carbon Film 680 ohm 1/5W J	1	
R243	3069104970	Carbon Film 100 kohm 1/5W J	1	
R244	3069681970	Carbon Film 680 ohm 1/5W J	1	
R245	3069104970	Carbon Film 100 kohm 1/5W J	1	
R246	3069102970	Carbon Film 1 kohm 1/5W J	1	
R247	3069243970	Carbon Film 24 kohm 1/5W J	1	
R248	3069103970	Carbon Film 10 kohm 1/5W J	1	
R249/R250	3069473970	Carbon Film 47 kohm 1/5W J	2	
R251	3069103970	Carbon Film 10 kohm 1/5W J	1	
R253	3069470970	Carbon Film 47 ohm 1/5W J	1	
R254	3029569470	Metal Film 5.6 ohm 1W	1	
R255	3069472970	Carbon Film 4.7 kohm 1/5W J	1	
R256	3069103970	Carbon Film 10 kohm 1/5W J	1	
R257	3069222970	Carbon Film 2.2 kohm 1/5W J	1	
R258	3069122970	Carbon Film 1.2 kohm 1/5W J	1	
R259	3069202970	Carbon Film 2k ohm 1/5W J	1	
R260	3069472970	Carbon Film 4.7 kohm 1/5W J	11	
R261	3069222970	Carbon Film 2.2 kohm 1/5W J	1	
R262	3069470970	Carbon Film 47 ohm 1/5W J	1	
R263	3069103970	Carbon Film 10 kohm 1/5W J	1	
R264	3069122970	Carbon Film 1.2 kohm 1/5W J	1	
R265	3069273970	Carbon Film 27 kohm 1/5W J	1	
R267	3069202970	Carbon Film 2 kohm 1/5W J	1	
R268/R269	3069302970	Carbon Film 3 kohm 1/5W J	2	
R270	3069122970	Carbon Film 1.2 kohm 1/5W J	1	
R271	3069202970	Carbon Film 2 kohm 1/5W J	1	
R272	3069472970	Carbon Film 4.7 kohm 1/5W J	1	
R273/R274	3069302970	Carbon Film 3 kohm 1/5W J	2	
R275/R276	3069472970	Carbon Film 4.7 kohm 1/5W J	2	
R277	3069103970	Carbon Film 10 kohm 1/5W J	1	
R278	3069561970	Carbon Film 560 ohm 1/5W J	1	
R279	3069202970	Carbon Film 2 kohm 1/5W J	1	
R280	3069682970	Carbon Film 6.8 kohm 1/5W J	1	
R281/R282	3069562970	Carbon Film 5.6 kohm 1/5W J	2	
R283	3069273970	Carbon Film 27 kohm 1/5W J	1	
R284	3069682970	Carbon Film 6.8 kohm 1/5W J	1	
R285/R286	3069104970	Carbon Film 100 kohm 1/5W J	2	
R287	3069102970	Carbon Film 1 kohm 1/5W J	1	
R288	3069243970	Carbon Film 24 kohm 1/5W J	1	
R289/R290	3069390970	Carbon Film 39 ohm 1/5W J	2	
R291	3069473970	Carbon Film 47 kohm 1/5W J	1	
R292/R293	3069104970	Carbon Film 100 kohm 1/5W J	2	
R294	3069103970	Carbon Film 10 kohm 1/5W J	1	
R295	3069682970	Carbon Film 6.8 kohm 1/5W J	1	
R296	3069473970	Carbon Film 47 kohm 1/5W J	1	
R297	3069561970	Carbon Film 560 ohm 1/5W J	1	

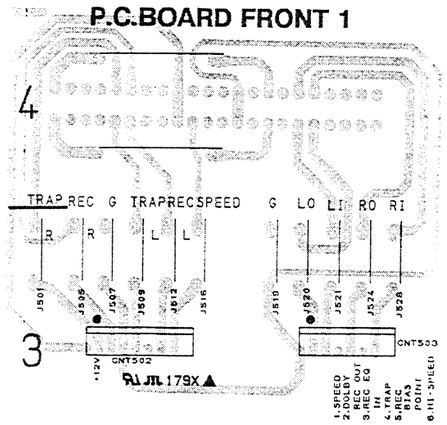
P.C.BOARD DECK MAIN



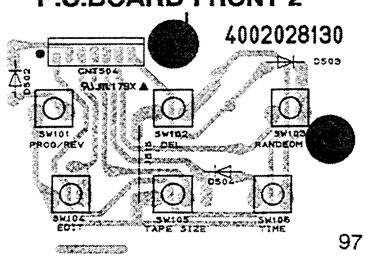
P.C.BOARD CDG



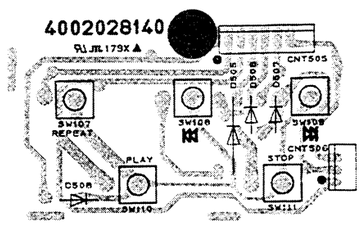
P.C.BOARD FRONT 1



P.C.BOARD FRONT 2



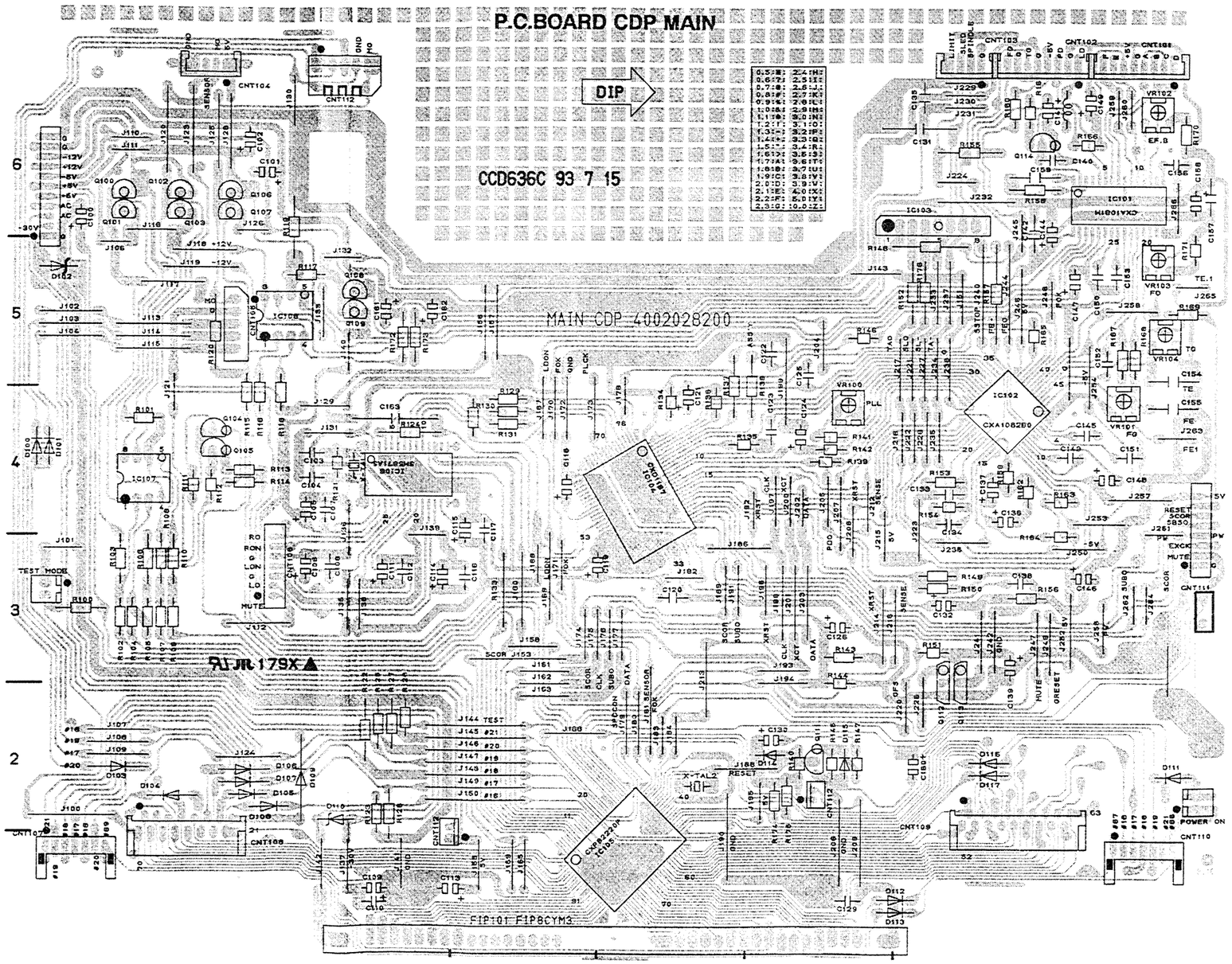
P.C.BOARD FRONT 3



P.C.BOARD FRONT 4

PRINTED CIRCUIT BOARDS

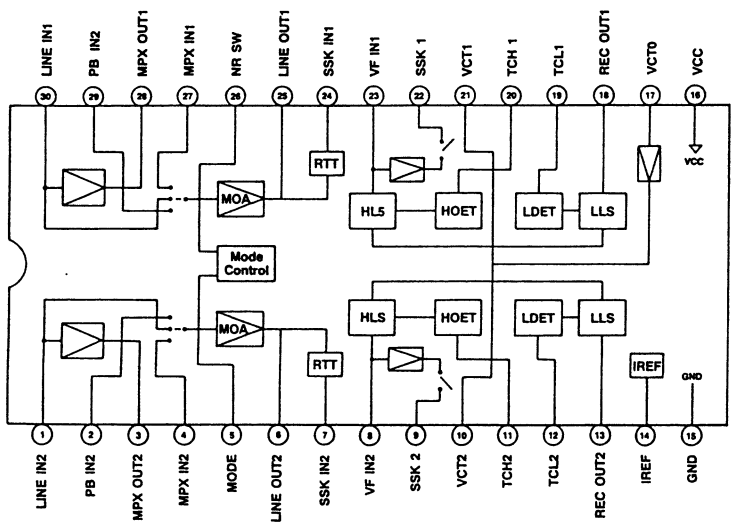
Ref. No.	Part No.	Description				Q'ty	Version
R298	3069562970	Carbon Film	5.6 kohm	1/5W	J	1	
R299	3069474970	Carbon Film	470 kohm	1/5W	J	1	
R300	3069100970	Carbon Film	10 ohm	1/5W	J	1	
R301	3069273970	Carbon Film	27 kohm	1/5W	J	1	
R302	3069512970	Carbon Film	5.1 kohm	1/5W	J	1	
R303	3069912970	Carbon Film	9.1 kohm	1/5W	J	1	
R304	3069243970	Carbon Film	24 kohm	1/5W	J	1	
R305	3069102970	Carbon Film	1 kohm	1/5W	J	1	
R306	3069103970	Carbon Film	10 kohm	1/5W	J	1	
R307	3069912970	Carbon Film	9.1 kohm	1/5W	J	1	
R308	3069103970	Carbon Film	10 kohm	1/5W	J	1	
R309	3069563970	Carbon Film	56 kohm	1/5W	J	1	
R310	3069103970	Carbon Film	10 kohm	1/5W	J	1	
R311	3069335970	Carbon Film	3.3M ohm	1/5W	J	1	
R312/R313	3069562970	Carbon Film	5.6 kohm	1/5W	J	2	
R314/R315	3069102970	Carbon Film	1 kohm	1/5W	J	2	
R316	3069103970	Carbon Film	10 kohm	1/5W	J	1	
R317	3069102970	Carbon Film	1 kohm	1/5W	J	1	
R318	3069473970	Carbon Film	47 kohm	1/5W	J	1	
R319/R320	3069102970	Carbon Film	1 kohm	1/5W	J	2	
R321	3069223970	Carbon Film	22 kohm	1/5W	J	1	
P1-2	**054101010003**	**ASS'Y P.C.B FRONT-I**					
45	4658003710	SW Tact				12	
46	4618008610	Switch Slide				2	
CNT203	4428526285	Wafer IL-FPC A 16P				1	
LED201	2381040301	LED, SLR-34GCN49, Green				1	
LED202	2381215704	LED, SLR-34URC N49, Red				1	
LED203	2381040301	LED, SLR-34GCN49, Green				1	
LED204	2381040301	LED, SLR-34GCN49, Green				1	
LED205-2092	2381040301	LED, SLR-34GCN49, Green				5	
Q201-Q209	2208522108	DTC114TS, NPN, Silicon				9	
R401	3069104970	Carbon Film	100 kohm	1/5W	J	1	
R402	3069333970	Carbon Film	33 kohm	1/5W	J	1	
R403-R405	3069151970	Carbon Film	150 ohm	1/5W	J	3	
R406	3069223970	Carbon Film	22 kohm	1/5W	J	1	
R407	3069151970	Carbon Film	150 ohm	1/5W	J	1	
R408	3069912970	Carbon Film	9.1 kohm	1/5W	J	1	
R409	3069123970	Carbon Film	12 kohm	1/5W	J	1	
R410	3069912970	Carbon Film	9.1 kohm	1/5W	J	1	
R411	3069103970	Carbon Film	10 kohm	1/5W	J	1	
R412	3069151970	Carbon Film	150 ohm	1/5W	J	1	
R413/R414	3069103970	Carbon Film	10 kohm	1/5W	J	2	
R415	3069123970	Carbon Film	12 kohm	1/5W	J	1	
R416	3069151970	Carbon Film	150 ohm	1/5W	J	1	
R417	3069223970	Carbon Film	22 kohm	1/5W	J	1	
R418/R419	3069151970	Carbon Film	150 ohm	1/5W	J	2	
R420	3069333970	Carbon Film	33 kohm	1/5W	J	1	
R421	3069104970	Carbon Film	100 kohm	1/5W	J	1	
R422	3069151970	Carbon Film	150 ohm	1/5W	J	1	



IC'S KEAD IDENTIFICATION & INTERNAL DIAGRAM

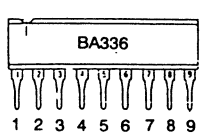
CXA1330S: IC110

Block Diagram

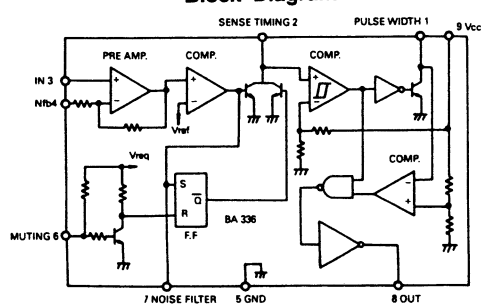


BA336: IC106

Front View



Block Diagram



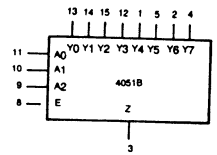
GD4051B: IC105

TRUTH TABLE

INPUTS				CHANNELS							
E	A_2	A_1	A_0	Y_0-Z	Y_1-Z	Y_2-Z	Y_3-Z	Y_4-Z	Y_5-Z	Y_6-Z	Y_7-Z
L	L	L	L	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
L	L	L	H	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
L	L	H	L	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
L	L	H	H	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
L	H	L	L	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
L	H	L	H	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
L	H	H	L	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
L	H	H	H	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
H	X	X	X	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

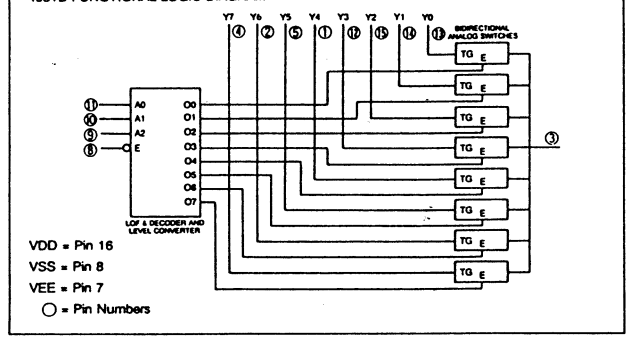
L = LOW Level
H = HIGH Level
X = Don't Care

Logic Symbol

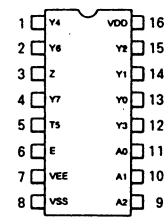


VDD=Pin 16
VSS=Pin 8
VEE=Pin 7

4051B FUNCTIONAL LOGIC DIAGRAM

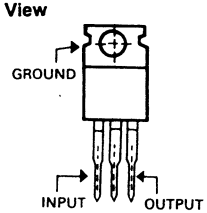


Top View

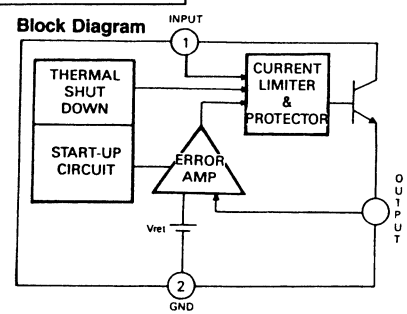


REG78XX: IC101, IC102, IC103

Front View

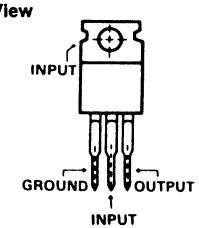


Block Diagram



REG79XX: IC113, IC114

Front View



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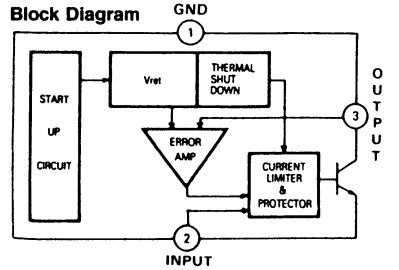
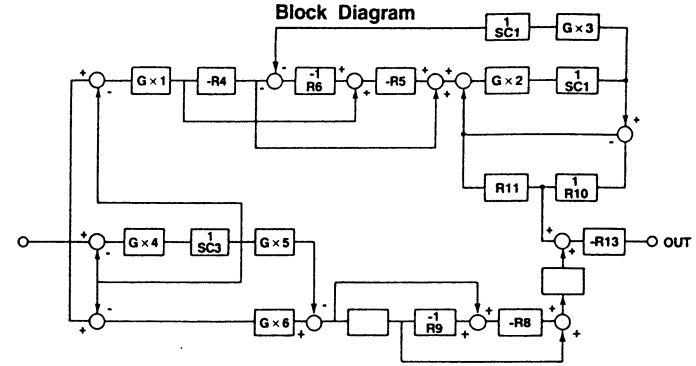
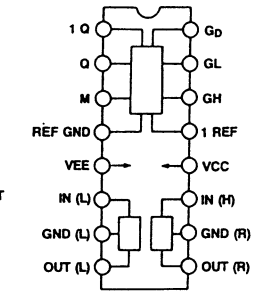


CXA1198AP(REC AMP): IC109

Block Diagram

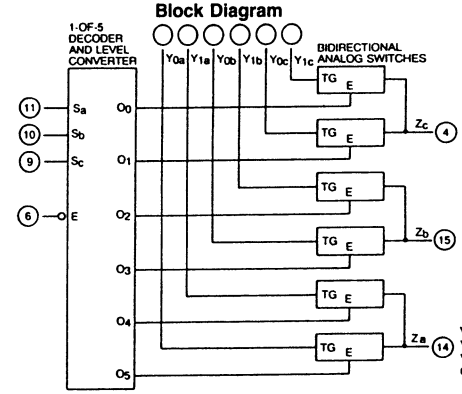


Internal Diagram



GD4053(A & B DECK SW): IC112

Block Diagram



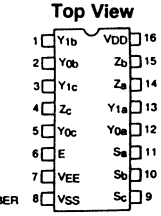
Internal Diagram

TRUTH TALBE

INPUTS		CHANNELS	
E	S	Y_a-Z	Y_1-Z
L	L	ON	OFF
L	H	OFF	ON
H	X	OFF	OFF

H=HIGH Level
L=LOW Level
X=Don't Care

Top View

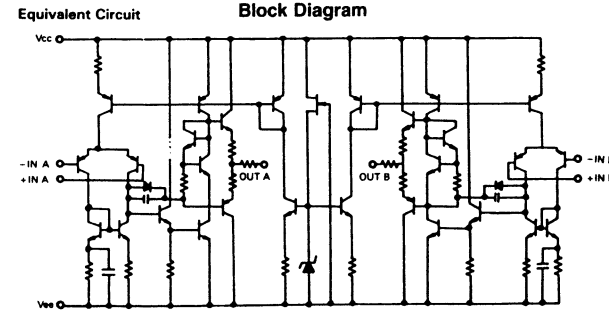


NOTE:
The SO Package has the same pinouts(Connection Diagram) as the Dual In-line Package.

KIA6259S(4559S): IC107, IC108, IC111

Equivalent Circuit

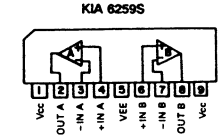
Block Diagram



Internal Diagram

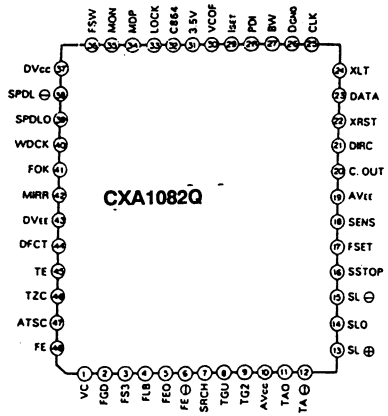
Top View

KIA 6259S

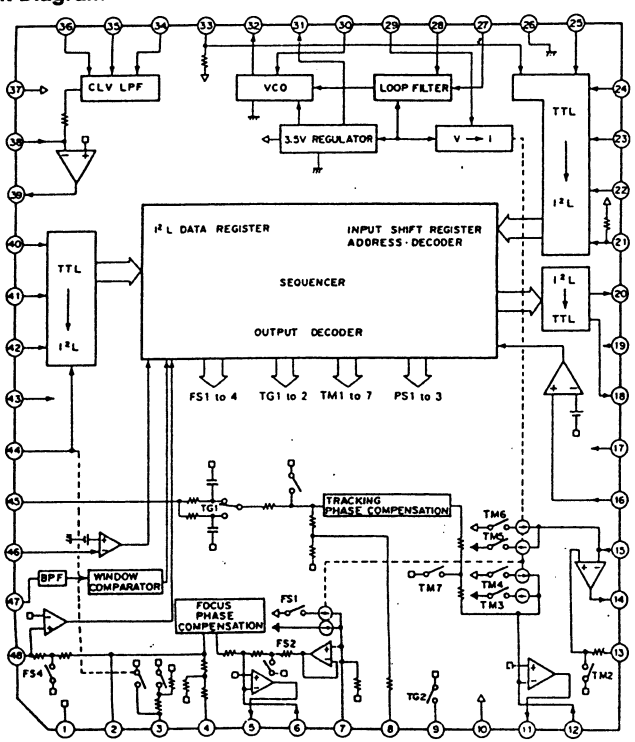


CXA1082Q: IC102

Top View

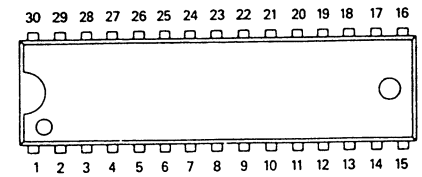


Block Diagram



CXA1081M: IC101

Top View



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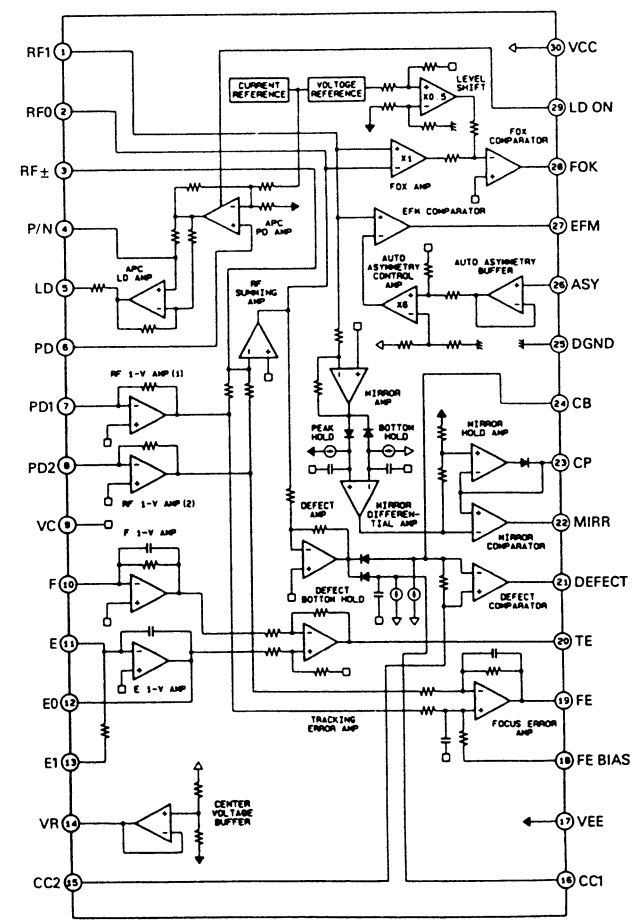
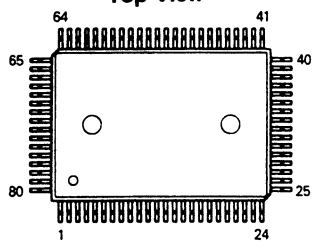


CXD1167Q: IC104(Digital Signal Processor)

Top View



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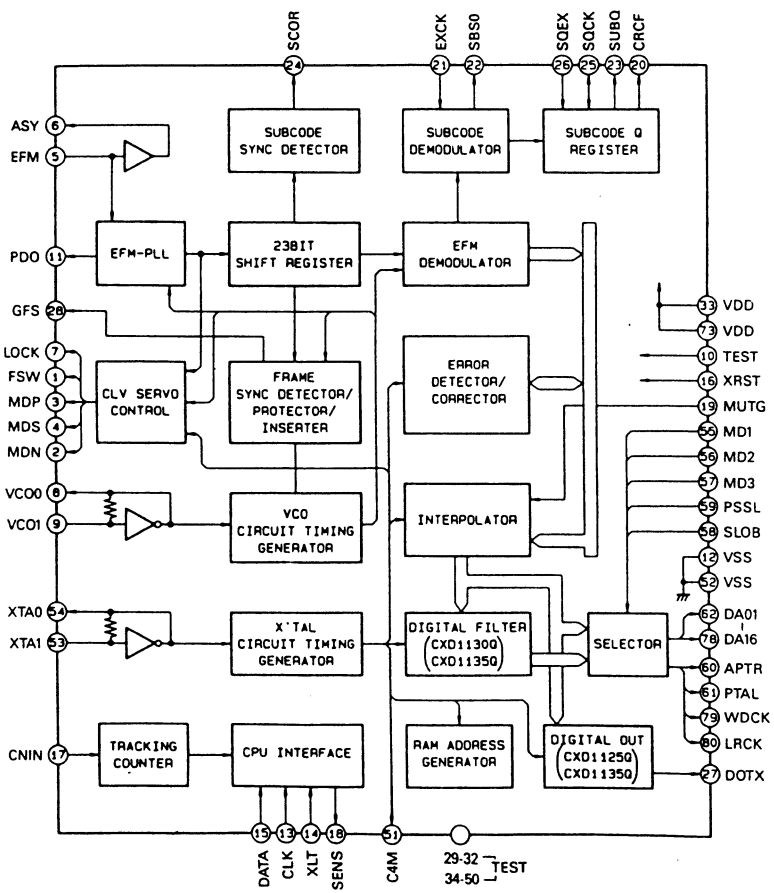
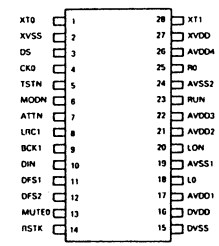
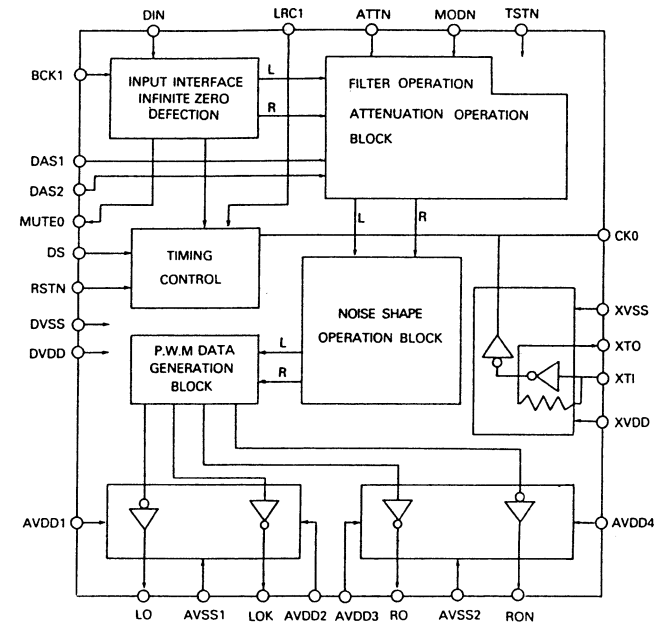


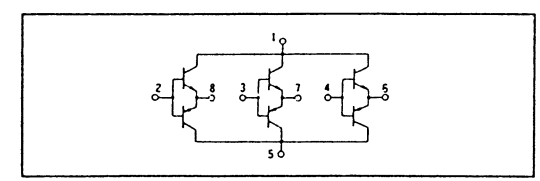


STA341M: IC103

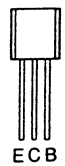
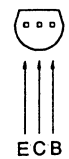
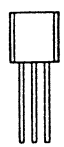
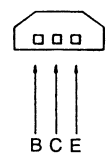
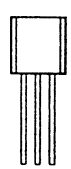
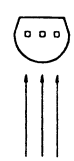
Block Diagram



Block Diagram



TRANSISTORS LEAD IDENTIFICATION

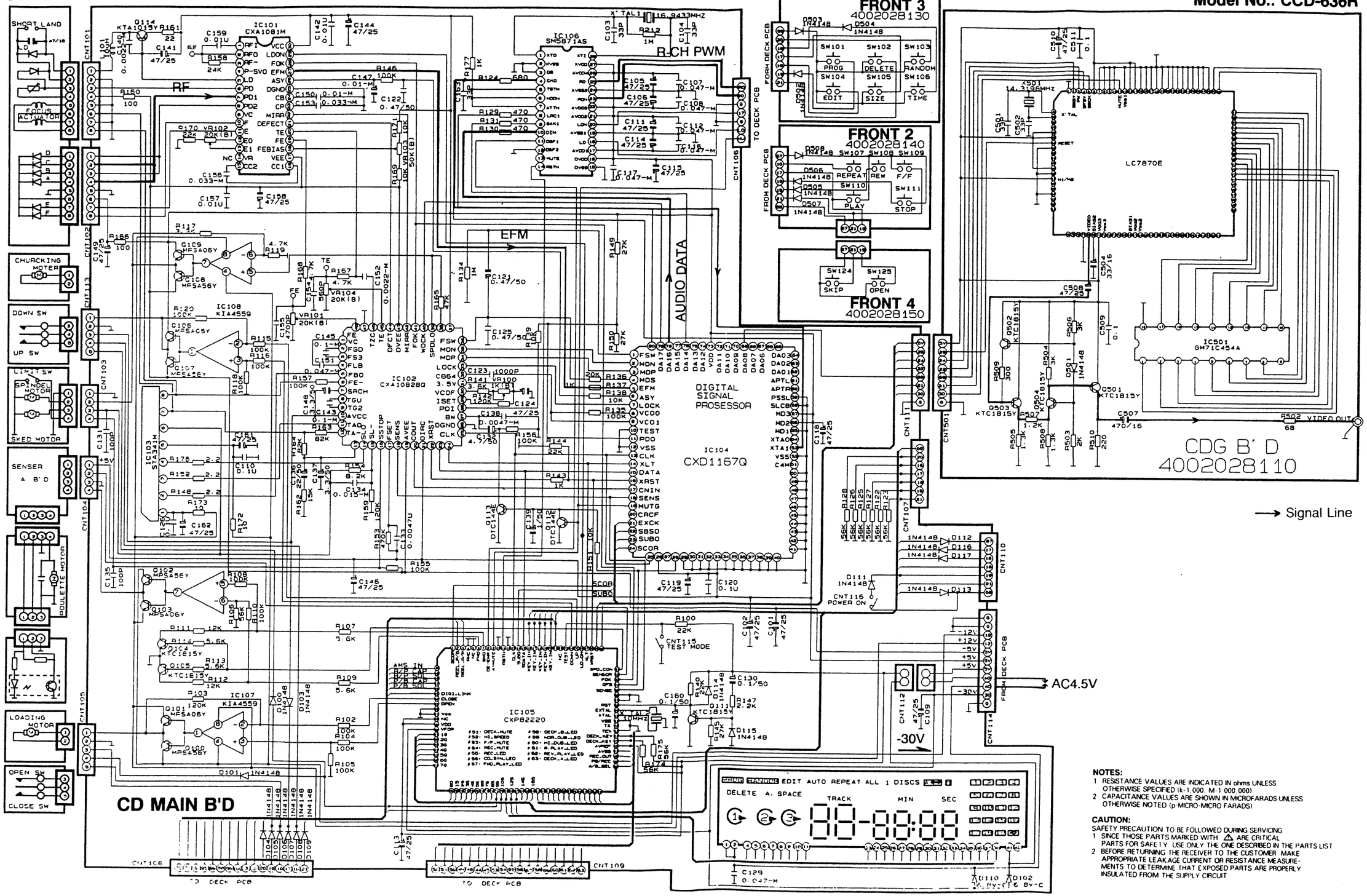
TRANSISTOR	FRONT VIEW	BOTTOM VIEW
KTC2236AY KTC3198Y KTD1302B KTA1015Y	 E C B	 E C B
DTC114YS DTC114TS	 E C B	 B C E
MPSA56Y MPSA06Y	 E B C	 E B C

TERMINAL NAME
B → BASE C → COLLECTOR E → EMITTER

SCHEMATIC DIAGRAMS

CD MIAN AND FRONT SECTION

Model No.: CCD-636R



→ Signal Line

NOTES:
1. RESISTANCE VALUES ARE INDICATED IN ohms UNLESS OTHERWISE SPECIFIED (k-1,000, M-1,000,000)
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED (p-MICRO-MICRO FARADS)

CAUTION:
SAFETY PRECAUTION TO BE FOLLOWED DURING SERVICING
1. SINCE THOSE PARTS MARKED WITH ⚠ ARE CRITICAL PARTS FOR SAFETY. USE ONLY THE ONE DESCRIBED IN THE PARTS LIST
2. BEFORE RETURNING THE RECEIVER TO THE CUSTOMER, MAKE APPROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT

DECK MAIN AND FRONT SECTION

Model No.: CCD-636R